Box 220

THE

MEDICAL TIMES:

A JOURNAL

OF

ENGLISH AND FOREIGN MEDICINE

AND

MISCELLANY OF MEDICAL AFFAIRS.

VOLUME THE EIGHTH.

APRIL 1, TO SEPTEMBER 30, 1843.

LONDON

J. ANGERSTEIN CARFRAE, ESSEX STREET, STRAND.

M.DCCC.XLIII.

PREFACE.

The termination of another volume—our eighth—again asks from us the few remarks which, retrospective as they must be, still take the name of Preface. Our first duty, made a pleasure by the promptings of feeling, is to offer the warmest acknowledgments of our gratitude for the constant, zealous, and enthusiastic support which our friends have poured out upon us, up to the present time, in an ever-augmenting stream. Though as independent and determined in our course as principle and natural character incline us, and the most triumphant success justifies, we have, during the last six months—thanks (shall we say?) to the good sense of our readers—made no enemies while securing large clusters of new friends. Our old supporters have proved to be, as *Polonius* insists to his son such ties should be, grappled to our "souls with hooks of steel." Except the few struck from our rolls by the "insatiate archer," we have not lost, to our knowledge, a subscriber, save the two or three whose public backslidings from professional rectitude extorted from us reluctant, but well-provoked, rebuke. Even one of these, if we are well informed, admits the honesty of our motive, kisses the rod that smote him, and reads, though no longer an avowed subscriber. The more recent friends we have made—an increasing host—are, if possible, still more ardent in our favour, and, from old and new alike—from medical and non-medical—from those abroad as from those at home—expressions of approval, assurances of kindness, and offers of services, flood into us by every post; and entitle us to say, that of all the journals of the time, of whatever opinion or character, no one has possessed itself more entirely of its supporters' sympathies and best wishes. Expressing our deepest gratitude for such unbounded kindness, let us be permitted, with as little self-complacency as possible, to undertake its analysis, tracing it briefly home to its causes.

In our humble judgment the primary qualification for good management of a journal—as of any public engagement which involves others' happiness—is a right heart. It has been strongly said that the best of faiths is his whose life is in the right—the best of governments, that best administered; and it may be similarly affirmed, that the Journalist ever nearest truth and good sense will be the Journalist most true-hearted. He is correct by—what is sometimes a surer test than reason—instinct: led by it the *rule* is to be right; and if, by exception, led ill, his errors carry balm with them, the source they spring from cleansing them of their poison. If we know him to be wrong, and cannot feel, as Cicero to his beloved Plato, that it is better to err with him than be right with another, we may yet look on with the sympathetic forbearance ever called up in a good mind by an amiable weakness towards which even virtue can *feel* praise and reason forget to be offended.

Now, without abating, we trust, one jot of becoming humility, we confidently lay claim to this merit of true-heartedness. In all that sincerity of thought and action which our anonymous position makes it no immodesty to vindicate, we have been devoted to the good, the just, the beautiful. In this great service we have said or done our all—whether in encouragement or warning, praise or censure, suggestion or elucidation, amusement or instruction. Our strictures on Medical Education and Government, our remarks on the Medical Wants of the Social State; our dealings with our public professional characters—writers or lecturers—in all these we defy an enemy to put his finger on a line in which we have played false to the mission we have undertaken. The Journalist, like the Hierarch, may be a fearful engine of mischief; but woe to him that so abuses his power and so forswears his responsibilities! His office is—in its destiny—a priesthood of good; and it is our boast that we can claim, in the face of our readers, to have discharged its functions holily.

Subsidiary to this *high principledness*, but not less essential to approval or success, is that attention to science in its rapid development and majestic progress which alone calls for, or justifies, the existence of a journal like this. The survey of the four or five hundred large pages of this volume cannot, of course, be wholly satisfactory to any reader, and must present parts offensive perhaps to many. We are but mortal; and may well be content to say of our book, with Martial—

> Sunt bona, sunt quædam mediocria, sunt mala plura
> Quæ legis hìc: aliter non fit, Avite, liber.

But we must be pardoned for insisting that there are *bona*, and that they are *plura*—and may refer in evidence to the volume's more prominent points. Serres supplies it with five of his truly "transcendant" lectures; Dr. C. J. B. Williams gives fifteen; Professor Brande a complete course of twelve on Organic Chemistry; from Raspail we have fourteen; Todd, G. Gregory, Nottingham, Fergusson, Clay, and others add their not valueless contributions. One hundred and fifty of our columns present a condensed statement of all worth attention in other journals; and other pages, with Dr. De Beaumont's aid, have made our readers acquainted with every useful thing springing from the genius and intense devotion to science of our French Medical brethren. In our Medical Biographies we have had under impartial review Velpeau, Bransby Cooper, Wardrop, Carpue, Chervin, Cartwright, Mutis, Tyrrell, and Morgan, and in our Reviews, Reports, Notices, and Editorial Observations, nothing has escaped chronicling which prominently interested our profession. Indeed, the world of medicine as it is, in its hopes, joys, losses, gains, defects, virtues, or triumphs—in its men, its manners, its institutions, has been visible in our pages as in a mirror. And at what a pecuniary cost! We hear of the debt owed to men who found lectureships, and open libraries: are Science's obligations less to those who, with so small a pecuniary condition, place it in its highest exaltation within the reach of so many?

In the new volume we shall make no change save in the adoption of such improvements as experience or favoring circumstances may suggest. One of these often recommended is to confine advertisements to a limited space, keeping them unpaged, and so ending the necessity for their inclusion in the volume. This is, undoubtedly, an improvement, and will be observable in all our future numbers.

We finish with an earnest appeal for a continuance, and, if possible, an increase of our friends' sturdy exertions in our favor. Each—the poorest—has the power of helping us. Let him feel and *use* it—for our success is as much his, as his interest and feelings are essentially ours. We are nothing if we are not the advocate—the mouthpiece—the organ of the profession; the emanation and representative of its mind, the instrument of its volitions, the medium of its public activity. Let us feel, then, in the continuance of its enthusiastic aid, and even *supererogatory* activity, the encouraging recognition of our devotion and usefulness. And why should smaller differences of sentiment interfere with our general unity and perfect cordiality of feeling? Some one of the thousands of our readers cannot but disagree with this or that of the countless opinions we are weekly announcing; but in the spirit which, as all must feel, presided in its formation, and animated its emission, why should such minor differences be remembered, or any fail to feel that *there* we all stand on Catholic ground, and dwell together in unity the most fraternal?

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 184. Vol. VIII. LONDON, SATURDAY, APRIL 1, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper, and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per Half-year. Post-free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY,

Delivered by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., E. & E., &c. &c. at the Royal Institution.

Gentlemen,—My object in the course of lectures which I have now the honour of beginning, will be to lay before you as succinct an account as is consistent with perspicuity, of the present state of organic chemistry. In putting together my notes for this course I have felt a very considerable difficulty that I had hardly anticipated when I undertook it. It is a very easy matter, I find, to put together a mere abstract or sketch of the present state of this branch of science; it is not difficult to give what may be called a course of elaborate and crudite lectures, or essays, on these subjects; but it is very difficult to avoid, on the one hand, a mere detail of well-known and popular facts, and on the other, a dry abstruse abstract of experimental investigations. And then there is another difficulty I have to encounter, and that is—that the greater number of the experimental parts of the enquiry are of such a nature that they do not admit of illustration in a room like this. They are very well seen by the experimentalist on his table, but in general these things are of such a minute nature that they hardly admit of the kind of illustrations to which you are accustomed here; however, I shall endeavour to steer a middle course, and in reference to the more minute details of our enquiry, I shall illustrate by experiment, as far as I can, the principles and results of modern research.

In making a few preliminary observations, I must call your attention to the wonderful fact of the paucity, as it were, of the elements which are concerned in the structure and functions of organic bodies. We have a set of, perhaps, between fifty and sixty elementary bodies, and of these there will only be four or five, or, perhaps, six, that will be much before you during this course. It will be the truly wonderful changes and adaptations to the purposes for which these combinations are required, to which I shall have to call your attention.

We are in the habit of talking of the *ultimate* and *proximate* elements of organic bodies, and the meaning of these terms is probably sufficiently evident; and, in the first place, by the term ultimate elements we mean those things into which all organic matter can be resolved. If we take any organic substance, be it what it may, and heat it without the access of air, we find that there remains charcoal. This is an elementary body, we cannot resolve it into any other form of matter, and therefore it is one of the ultimate elements of organic matter. Other elements are those forms of matter which we call *oxygen, hydrogen*, and *nitrogen*; these are gaseous bodies. Hydrogen, nitrogen, oxygen, and carbon, are a class of elements which we shall have to deal with, and to these we shall have to add *sulphur* and *phosphorus*. We find oxygen, hydrogen, and carbon in all organic matter; we find nitrogen in by far the greater number of the products of organisation, and certain other elementary bodies must also have a place in our investigations, though they are comparatively insignificant in proportion; they are phosphorus, sulphur, iron, and some other substances. Oxygen, hydrogen, and carbon, are, however, the leading elements, and they are commonly the most abundant in vegetable bodies; but we find in most cases, if we examine animal matter, that nitrogen makes its appearance. In by far the greater number of proximate elements of animal bodies we find nitrogen as one of the constituents. Now it will be a question of great importance, and great interest to us by and bye, to ascertain whence this nitrogen is derived; it constitutes a very large part of the substance of graminivorous animals, yet it is a curious circumstance that the plants and roots on which they live contain scarcely any of it, and we are disposed to regard it rather as an accidental than a constant ingredient in their composition. We know that nitrogen is essential to animal life, we find that it is essential to almost all plants, and we know that it exists in the atmosphere, which, we find, contains it a great deal more abundantly, perhaps, than we find it elsewhere. With regard to the *proximate* elements, these are substances which we can separate by certain chemical processes, and which we can identify as having some definite and peculiar character, and also certain definite compositions. For instance, we have *resin* as one of the proximate elements of vegetables, and we can separate it from a great number of substances; *sugar* is another—*starch*, another—*oil*, another,—and so we come to a set of combinations of these substances, which we call the proximate component parts of organic bodies. Now in all these substances which we have here—oil, starch, resin, and sugar—we shall find that we have only three elements—carbon, oxygen, and hydrogen; but we find that we can group them together in such a way as to come to some very extraordinary conclusions respecting the families of organic bodies and the order to which they belong. In sugar, in starch, in gum, and in wood, we find that the ultimate elements are such that we may express their composition as represented by charcoal and water. In all the esculent and nutritive vegetables—in the grain of wheat more especially—we find a substance identical in all its chemical properties, and in its chemical constitution, with animal matter, containing nitrogen. This has long been known, but it has only lately been brought into notice, or established as a physiological fact, by Liebig, a name which I shall have to bring frequently before you in our future discussions. Then there is a question that will come before you, a very important and a very curious one. Look for instance at the growth of the acorn; we see it in the progress of ages giving rise to the gigantic oak, and we are naturally led to ask whence this enormous accumulation of matter? Here is the acorn planted in a certain spot of earth, and in the course of a hundred years we find it has accumulated three or four tons of solid matter, in consequence of the growth, as it is called, of the vegetable. Now it is, of course, an interesting question whence this matter is derived? We have recourse to the common earth, and say it is derived from the soil, but we find that the soil remains very much the same at the end of the growth of the tree as it was at the beginning; we trace no great abstraction of matter from it, and although, no doubt, there is a portion of it, a considerable portion, derivable in a particular way from the soil, the soil performs but a part, and it is from the air that this great accumulation of matter is principally derived. Thus we find that trees grow and derive subsistence from that which supports animals also. We find that the leaves of vegetables are in fact aerial roots as it were, continually taking up substances from the atmosphere to contribute to the vegetable's nourishment and growth, substances which if they were not so abstracted would exterminate animals by their accumulation. Now, when the atmosphere performs this very important part in the growth of vegetable bodies, when the vegetable bodies are essential to the nourishment of the graminivorous tribes, and these in their turn are essential to the carnivorous animals, it will of course be an interesting matter of enquiry, (and a great deal of attention has been paid to it,)—what are the substances in the atmosphere that can be so nutritive? and how are they arranged?

Of course, therefore, an accurate knowledge of the composition of the atmosphere is an essential and pleasing branch of organic chemistry; and in order to form just notions of the parts performed by the soil and the air respectively, we must look carefully into the composition of plants themselves, and see what substances and what elements belong to the air, what belong to the soil, and what are common to both. By looking in this way into the composition of vegetables, we shall be able to draw some very curious conclusions. There are certain elements absolutely essential to the growth and culture of vegetables generally, and there are others which are essential to particular vegetables only, and they may be called accidental or occasional. Perhaps, I can make this statement more palpable to you by putting a case before you as an example. Carbon, hydrogen, nitrogen, and oxygen, we say, are essential to vegetables generally; but in certain vegetables, I find, in addition to the four elements I have named, sulphur. Now, it is a curious fact, that, in the common mustard-plant, sulphur is an essential element, and without it the mustard cannot live. We find that, in wheat, phosphorus in phosphate of lime is an essential element, and we cannot cultivate wheat without the presence of phosphorus. Then, I find again, that wheat, or clover, or barley, or oats, growing in particular soils, will occasionally take up particular substances: these may not be essential, but still we find in some particular cases, that there may be some accidental ingredient that appears to contribute very importantly to the production and growth of the plant. There is one point you will always remember in our future discussions, and that is—that there is no life or vitality in matter which is dry or deprived of water; that water, therefore, is an essential part of organic matter. Then, again, as I have said already, there is no organic body which does not yield charcoal or carbon, hydrogen, and oxygen: we find all these substances, and, superadded to them, is nitrogen, which is as necessary to vegetables as animals, which in fact, as entire plants, cannot exist without it. The bark of vegetables may contain starch, sugar, or gum, and we find that these substances do not contain nitrogen; still we find nitrogen when we take a vegetable as it is growing, with all its juices in perfection. Another substance, which may also be called essential to vegetables, is *silica*. There are many of them that contain it essentially and necessarily, and cannot live without it. For instance, the grasses, reeds, rushes, canes, bamboos, all these substances contain essentially silica. Take, for instance, the straw or stalk of wheat, barley, or rye—in all these substances you find a certain quantity of silica essential to them; in fact, it is as essential to these vegetables, as the carbonate of lime is to the egg. The stems of these substances are rendered straight, hard, and durable, and are unaffected by the moisture which surrounds them, by the small quantity of silica which is built up along with the true organic matter, and I think that the strength of the stem may very fairly be said to

depend principally on the silica contained in it. The silica is very small in quantity, but when a haystack is burned you find a hard stony body as the result of the combustion, and this, in fact, is glass, which is a compound of silica with the alkaline matter of the grass. In wheat, you have *phosphate of lime*, or *bone earth*—there is a considerable quantity of this in the grain of wheat, showing that phosphorus is an essential ingredient. If you burn vegetables you have what is called ashes, and these ashes contain potash; not that the alkaline matter existed as such in the vegetables, but it existed as a salt, and, by burning, that salt is decomposed. Kelp and barilla are formed by burning vegetables, and many vegetables are burned expressly for their ashes. Then we come to *chlorine* and *iron*: in fact, all the elements that we find in the flesh and in the blood of graminivorous animals, must, of course, have been derived from vegetables. In reference to some of the matters I have just been talking of, we see they begin to assume an aspect of considerable importance, because one kind furnishes silica, another furnishes phosphorus, and another furnishes sulphur—and the quantities in which we find they furnish these substances are very small, but they are principally derived from the soil; hence the necessity of giving to the soil those inorganic constituents which particular crops require. For here we find, by attending to the matters contained in particular crops—by ascertaining how far these are essential to them, how far they exist in the soil, and how far they do not exist, or can be added economically and profitably to the soil—that a great door is open to agricultural improvement upon chemical principles. I am not going into the details of the chemistry of the atmosphere, water, carbon, and so forth—but only to certain important points connected with them. In looking at the atmosphere, we find it contains carbon, hydrogen, oxygen, and nitrogen. You find all these in the atmosphere: the great bulk of the air we breathe being made up of nitrogen and oxygen, to which hydrogen is superadded in the form of water, and carbon, in the form of carbonic acid: and I might go further and say that nitrogen exists in the air in the form of ammonia, however, in very minute quantities; and although a considerable quantity goes to make up the atmosphere, if we analyse it we hardly find any. The table here given will shew the composition of the atmosphere:—

	By Measure.	By Weight.
Nitrogen	77.5	75.55
Oxygen	21.	23.32
Aqueous Vapour	1.42	1.03
Carbonic Acid. .	0.08	0.10
	100	100

(To be continued.)

LECTURE ON THE LAWS WHICH GOVERN THE MODE AND RATE OF DECAY IN THE HUMAN FRAME.

Delivered at St. Thomas's Hospital, on Wednesday, March 22, 1843.

By George Gregory, M.D.

Physician to the Small-pox Hospital.

If this were a pulpit instead of a rostrum—if, in place of being a physician addressing a mixed assemblage of professional and unprofessional persons, I were a bishop or curate addressing a congregation, I should have no difficulty in fixing upon an appropriate text. The third chapter of Genesis, verse 19, would supply me with a most apt one, where we read, that not very long after man's creation the decree went forth, that whereas "from out of the dust he arose, so unto the dust he should return." When this fiat, so pregnant with consequences to the whole human race, was issued, certain laws were at the same time established which should govern the *mode* of decay of the human frame, and regulate the *rate* at which such decay should take place

To determine those laws has been a continual object of pursuit with the professors of medical science from the earliest periods. The physiologist, availing himself of the knowledge which his researches into *life* afford, has traced the sources of decay, and explained the direct causes of death. The physician, carrying this knowledge into the streets and highways of life, has laboured assiduously (the lancet in one hand and quinine in the other) to arrest decay, when hurrying forward with a too fatal precipitancy. Dragging from their secret recesses in the vegetable and mineral world the powerful aid of mercury, of steel, and of iodine, he has also striven (with a skill which deserved success even when he could not command it) to control and check that slower process which, by a different route, lands us at last at the Kensall-green terminus!

"Sedem properamus ad unam!"

Where neither the one nor the other of these offices has been open to him, his care has been to smooth the downward path of life, and, with poppy, mandragora, and other drowsy syrups, to lessen that bodily suffering, the ghastly spasm and the racking torture, which, under certain circumstanes, presently to be noticed, decay bears in its train.

THE DECAY OF THE HUMAN FRAME,

Which has thus practically been the object of the physician's solicitude from the days of Hippocrates downwards, has been studied, however, more in parts than as a whole. Few have attempted to give a general view of the subject—to connect all the varieties in the modes of human decay, and supplying that link which binds them together—to show that here, too, Nature operates by fixed laws. To remedy this deficiency (if, indeed, the deficiency exists), to arrange and generalise the opinions concerning the decay of the human frame, which separately are so familiar to us all, and to bring to the aid of our judgment in this matter the faithful and impartial results of statistical inquiry, —these are the objects of the present lecture.

A little reflection on the several modes by which mankind are removed from the world, will suffice to show that they admit of being arranged into four classes, namely—1. Natural decay; 2. Premature decay, of a slow or chronic kind; 3. Rapid decay, by acute disease and unseen violence; 4. Rapid decay (or destruction of the body) by open violence. The first three of these topics will furnish us with abundant food for reflection. I begin with natural decay.

The first question which will occur to any one engaging in the inquiry is,—how is natural decay effected? What is the process by which nature provides for the gradual extinction of life within us, when a constitution naturally sound, which eighty returning suns have found and left in the enjoyment of health, at length approaches its natural close? The answer is, that Nature effects her object by a process of hardening of the structures.

OSSIFICATION THE GREAT PROCESS OF DECAY.

The disposition in the tissues of the human body to harden is displayed in a variety of ways. The earliest ever witnessed is the tendency to deposit sand and gravel in the kidney, which, by successive depositions, advance in time to the dignity of stone. This, which is so very common in old age, is occasionally witnessed in the child. The same tendency is displayed in other persons by the formation of biliary calculi, or gall-stones. Very soon after puberty we see in some constitutions a disposition to deposit bony matter about the roots of the lungs. These deposits, called bronchial calculi, are sometimes expectorated, but they may *per se*, become the direct cause of death. In Nov. last, the quarter-master of her Majesty's eighth regiment of foot, stationed in Dublin, died of bronchial calculus It had formed in the triangular space below and between the bifurcation of the bronchi; an abscess followed, having fistulous communication with the bronchi and with the œsophagus. One morning the calculus slipped into one of the fistulous openings into the bronchi, and life was suddenly extinguished.

With reference to the decay of the frame, the most important hardening is that of the apparatus for the circulation of the blood, for pliancy is essential to the functions of the arteries. Other parts may stiffen and become rigid, and no other result follow than local inconvenience, but arteries must be adapted to the varying momentum of the blood, to those changes in the circulation which are the necessary consequences of exercise, of mental emotion, of the indulgence of our appetites.

The first inroads on the normal condition of the arteries are made by the deposition of atheromatous points, at first scattered over the surface of the arterial system; but soon congregating in patches of cartilaginous hardness in those vessels which have most work to do, viz., in the large artery issuing from the heart (aorta), and its three earliest branches. To these atheromata succeed spicula of bone, which shoot up here and there like crystals, and at length unite into masses. As life advances, this ossific process creeps into the most distant branches of the arterial system.

The arteries of the brain are those which in a perfectly normal state, with no disturbing forces whatever (no hereditary predisposition, no exposure to cold, no weakness left as the legacy of a departed ailment,) first yield; for they are the *finest* and the most exquisitely organised, and therefore the most carefully packed of all the vessels of the body. Some artery of the brain gives way, and blood is effused upon its delicate structure. Apoplexy, therefore, is the most perfectly natural—is the very *beau ideal*—of all the modes of vital decay. How splendid a picture does this present of the unbounded love and tenderness of the Creator towards his creatures! The body must perish, but in the truly normal mode of decay, death is effected by a process which, in one instant, destroys all sensation and all consciousness!

Allow me to read to you a sketch of the decay of the human frame under the very circumstances now supposed, drawn by a female hand, but by no unskilful one.

A lady at Bath (a relation of my own), one of a family remarkable for longevity, had reached the age of eighty-nine! weak in body, but in perfect possession of all her faculties. On Monday, Feb. 6, 1843, just six weeks ago, she was sitting on a sofa, talking to an old nurse, who had called to visit her, in the enjoyment of her usual health, when suddenly she bent forward without groan or sigh. From that moment consciousness and sensation ceased. She was bled and leeched, and all the appliances of human skill were ably directed, but she never revived. "The body," writes my fair correspondent, "remains motionless. No food is taken. The sound of breathing alone gives sign of life; the lungs act; the pulse beats; and the body, Mr. Stockwell tells us, is living on itself. For seven! long days has this lasted. We feel that our relative has been dead for a week! We have her body, it is true, but it is only her body that remains with us—*warm*, instead of *cold!*"

Such is the perfectly normal or natural mode of decay of the human frame. In all such cases the lamp of life is not extinguished. It burns down to the socket, and in the most wonderful manner extinguishes itself. The spectacle is full of interest to all; for it proves that the decay of the frame and the ultimate extinction of life, are regulated by the same consummate skill which presides at the birth, and which moulds into symmetry the growth of the body.

Other modes of death there are, all, like apoplexy, referable to the hardening process. Among these I may mention as the most frequent, palsy, aneurism, angina pectoris, and dropsy. Palsy is only a minor degree of apoplexy. In angina pectoris the process of decay is slow and accompanied with severe suffering. The heart itself is slowly converting into bone. As if to make amends, Nature has ordained that the extinction of life should here be instantaneous and painless.

A few cases of aneurism arise from accidental causes, rupturing the vessel, and this disease, therefore, may show itself in early life, but, for the most part, aneurism is the consequence of the ossific process, and a form of natural decay. The blood insinuates itself by the side of some minute spicula of bone, and gradually distends the coats of the artery.

The deposit of osseous matter in the *interior of the heart*, especially about the valves of the aorta, is an exceedingly common mode of natural decay. The immediate effect of it is to prevent that free and equitable distribution of the blood which is

essential to health and life, and ultimately to bring on dropsy. Dropsy, therefore, is another of the modes of natural decay.

DEATH BY COMA.

Another provision of Nature for the extinction of life at advanced ages, differing equally from the impairment of the brain and of the heart, is to be found in *interruption to the respiration.* Air is as necessary to man's life as the blood, or the nervous influence. Now, in many cases of purely natural decay, the air-passages are made the medium of extinguishing life. Fluid effusion takes place from them by action which originates within the body, and though of an inflammatory kind is wholly independent of cold. Bronchitis, then, is a third mode of natural decay, and it is that which Nature most generally sets up, when either extreme debility, or the gradual disorganisation of other structures, has at length reached that point which is incompatible with life.

Signor Ferrari, formerly well known and esteemed as a director and musical composer to the Italian Opera in London, had reached the age of eighty-one. Life for him had lost its charms; the sight of both his eyes was gone; his body was greatly enfeebled and emaciated; rheumatic pain racked his limbs; his appetite began to fail; he had learned but too forcibly

"That life protracted is protracted woe."

The few friends who survived could perceive that his end was approaching, but how that was to be effected was a mystery, for his pulse was good and his intellect clear. Early in November, 1842, he began to complain of cough; this increased upon him. On the 24th of November I first saw him. He was then expectorating an abundant puriform mucus; his debility augmented daily. From that date he never left his bed. Early in the morning of the 30th of November incipient delirium betokened the circulation of venous blood through the brain. At six, p.m., of that day he calmly expired.

This destructive process, spontaneous bronchial inflammation, commonly called bronchitis senilis, is often, I have said, set up in the advanced stages of the disorganisations (or *degenerations*, as they are called,) of the animal tissues. To the consideration of these I next proceed.

In this mode of decay the several structures of the body do not simply harden; their nutrient vessels take on certain diseased actions; healthy structure gives place to morbid structure, which in process of time becomes incompatible with life. There are an immense variety of these chronic degenerations. Foremost in the scale stands the cancerous degeneration, where a malignant mode of action is set up, accompanied generally with excessive pain. It commences in one tissue and gradually extends to a second and a third,

"Till pitying Nature signs the last release,
And bids afflicted worth retire to peace."

The deaths by cancer throughout England and Wales average 2700 per annum; and it appears that about eighteen die annually by this disease for every 100,000 of the population.

Closely associated with the cancerous degeneration are those called fungus hæmatodes, medullary sarcoma, and melanoid tumour. Another series of disorganisations are the tubercular, the most perfect specimen of which is the large white tubercle of the liver.

A lady, unmarried, the sister of one now standing before me, about forty-five years of age, had passed blood on several occasions, but soon recovered. In the spring of 1839 this symptom returned with more than its wonted severity, followed by indigestion, flatulence, and a sallow aspect of countenance. To these symptoms succeeded great bodily weakness and emaciation; then followed, by slow degrees, excessive viscidity of the saliva, total sleeplessness, frequent syncope, aphthæ, and at length deep jaundice.

I mention this case because it gives me an opportunity of explaining to you what happens when Nature, generally so indulgent, fails to set up that bronchial inflammation just adverted to. Death must then be effected by the mode of "*exhaustion*," the senses remaining entire and the breathing unimpaired, until the last drop of blood in the body has been *used up.* So long as wine and brandy could be forced down, so long did the flickering taper of life in this estimable lady continue to burn. But the time at length arrived when, in consequence of the aphthous state of the mouth, the act of swallowing gave such exquisite pain that all support was necessarily abandoned.

Death by exhaustion is truly terrific. For many days the lady prayed fervently to be released from the wretched feeling of a heart acting till there was no blood left for it to act upon.

With what force and truth does Milton describe this mode of decay:—

"For over them triumphant Death his dart
Shook, but delay.d to strike, tho' oft invoked
With vows, as their chief good and final hope!
Sight so deform what heart of rock could long
Dry eyed behold?"

This case is a good paradigma of structural degeneration taking place at its most usual period of life. There are many others of a like kind of much more frequent occurrence. One of the most remarkable is granular kidney, a form of vital decay which has been studied with such care and success by the physician of a neighbouring hospital, that in imitation of the good old custom which dictated such names as the Eustachian tube, the circle of Willis, or the capsule of Glisson, it has been called "*Bright's kidney.*" It is often the precursor of dropsy, and the chief cognisable evidence of what the world calls a "*break up of the frame.*" To this form of disorganisation and decay I may add scirrhus of the stomach, scirrhus of the rectum,—tumours attached to the peritoneum and uterus,—hypertrophy and soft vegetations about the heart. In this latter case the struggle towards the close of life is often fearful, the mode of death being sufficient of itself to characterise the disease.

Heart affections are certainly on the increase in this country. The deaths from this cause throughout England and Wales amount now to *four thousand* annually.

Disorganisation of the pancreas appears to be the *rarest* form of chronic decay. Not more than twenty-five persons die of it annually in England. The advanced stages of this disorder are attended with great distress, with delirium, convulsions, and other evidences of nervous sympathy. We cannot here say "*facilis descensus Averni.*"

PHENOMENA OF GROWTH.

In all the cases now adverted to, decay is traceable to the branches of the aorta, to those vessels which for the first twenty years of life are incessantly occupied in that truly wonderful process, "*growth*," a phenomenon which, from its extreme familiarity, ceases to be the object of our astonishment; yet which, when duly considered, is nothing less than a daily miracle, pointing out to us the immeasurable distance interposed between divine power and the utmost efforts of human skill. Splendid as the steam-engine is, teeming as it does with the elements of power, a monument of man's ingenuity, yet *as* it issues from the manufactory so it must ever remain. The combined genius of a Watt, a Bolton, and a Maudslay, could never make even the most distant approach to that simple phenomenon *growth*, which every child daily displays.

From the twentieth year of life, when growth ceases, the action of these nutrient vessels begins to change. Sometimes it subsides quietly, and the system is left in possession of its completed strength for another period of twenty years; but frequently, too, it happens that from having been so long occupied, this, their normal subsidence, does not take place. The capillary vessels refuse to be idle; mischief of some kind must then inevitably follow; either a process of hypertrophy commences, or it may be of degeneration, and thus is the foundation laid for decay of the frame. In persons of weak or scrofulous habit, the healthy process of growth, and one or other of these morbid abnormal processes, may chance to proceed simultaneously.

At length, even to the strongest, comes the age of forty, when the top step of the ladder is reached, and the "*turn of life*" takes place; then it is that the degenerating actions chiefly prevail, and *they* constitute (from this period to the age of sixty) the chief modes of human decay.

Time, then, the great destroyer of all things, is the main agent employed by nature in working out the decay of the frame, but several other circumstances contribute to the result. Of these by far the most important is

"HEREDITARY PREDISPOSITION,"

which exists not only to such general modes of disease and decay as *gout, gravel, rheumatism*, and *cancer*, but even to the disorganisation of particular viscera. Scirrhus of the stomach, which, at the age of fifty-two, brought to a close the splendid but chequered career of Napoleon Buonaparte was hereditary in his family. Affections of the heart may often be traced to the same source.

Again, intemperance is one of those accessory causes which, lighting up diseased actions, pave the way to many kinds of disorganisation, especially those of the liver. Occupation, also, has its share of influence. Chimney-sweepers are liable to scrotal cancer; painters to palsy.

The proportion which deaths by natural decay bear to the total mortality cannot be made out with strict accuracy, but we shall be near the truth in stating that there die, per 1000, of old age, debility, and the disorders depending simply on age, 175; by the disorganising or chronic morbid processes *accompanying the advance of life*, 225; total by this mode of decay, 400 per 1000.

I must now withdraw your regards from the several varieties of slow but natural decay, to fix them on the equally important, I was almost tempted to say the still more interesting, subject of slow but *premature* decay.

With very different feelings do we view the departure of the veteran who, full of years and honours,

Superfluous lags upon the busy stage
Where newer forms and different views engage;

and the early exit of ripening beauty or aspiring genius.

It happens to but a small portion of mankind to be gathered to their fathers, like the Patriarchs of old (after completing the full term of human existence), by a slow and "unperceived" decay. The larger proportion of mankind perish either by some acute malady cutting life short, or by the mode of decay now to be described.

AORTIC AND PULMONARY DECAY.

Those who are in the least conversant with the structure of the body must know that the heart is a double organ; but all present may *not* know that the two portions of the heart have distinct offices. The left heart is engaged in the great work of growth, and in the repair of injuries, and in those exceedingly useful processes, digestion and secretion, without which life would soon come to a stand still; the other, the right heart, placed, for convenience of stowage, in the same bag with the other, has a totally different function; it is merely the workshop of the other,—the laboratory, from which the left heart draws its hourly decreasing supplies. Now, with this difference of function is associated a remarkable difference with reference to decay. The vessels of each system are governed, in this respect, by different laws; those of the right heart take on the process of decay at a date much anterior to that when the aortic system of vessels gives way. With reference to aortic decay, we, therefore, call pulmonary decay *premature*, not that it really is so, any more than aortic decay can legitimately be called *protracted.*

I know no reason why the lungs, and the peculiar apparatus of vessels belonging to them, should be liable to an earlier decay than parts supplied by the aorta; it is a *law* of the animal economy—a principle interwoven in the construction of our frame. I believe that no reasoning will ever carry us beyond the simple fact, that pulmonary decay precedes systemic decay, doubtless for some wise and necessary purpose.

Pulmonary decay is, of course, what the world call "consumption;" it occurs at all periods of life. Mr. Farr, in his third report, has given a table shewing the prevalence of consumption in three of the most populous towns in England, at all ages,

from birth to decrepitude. I will take Liverpool as an example.

There died of consumption at Liverpool in 1839, 1124 persons, of them there were—

Under the age of 3 years ..	227	(1-5th of whole.)
Between 3 and 15..	194	
" 15 and 30..	379	(1-3d of whole.)
" 30 and 50..	258	
Upwards of 50 years of age.	66	
Total	1124	

You see that consumption is diffused through all ages of human existence, but not equally; that it is most frequent at that period of life when the growth of the body is completed, (that is, between 15 and 30,) and least common in advanced years.

Consumption is an hereditary ailment, but it appears also in families who have shown no such tendency. A single member of a family sometimes dies consumptive. Delicate texture of the lung is the root of the evil, but habits of intemperance may break down a structure of lungs originally the soundest.

Consumption is immeasurably at the head of all the fatal diseases of the human body; no single malady approaches near it. Scarcely less remarkable than its frequency is the steadiness of the mortality which it occasions, bespeaking, as it undoubtedly does, some peculiarity of cause.

There died of consumption throughout England and Wales in 1838, 59,025 persons; in 1839, 59,559 persons; in 1840, 59,923 persons, while the total mortality varied from 342,519 to 359,561.

In the metropolis, during the five years from 1838 to 1842 inclusive, the deaths by consumption have been as follows:—7687, 7104, 7236, 7326, 7145; while the total mortality varied from 45,272 to 52,698.

No other disease exhibits an uniformity at all approaching to this.

Females are the especial victims of consumption. In the three years, 1838, 1839, and 1840, there died throughout England and Wales, 80,560 males; 90,711 females; that is, 9 females to 8 males.

Compared to the total mortality, the average deaths by consumption are 170 per 1000. This, you will remember, is very nearly what we calculated the deaths by old age, debility, and its associated disorders to be; in other words, rather more than 1 out of every 6 deaths that occur in England is imputable to consumption, and one to old age, and its consequences; one to premature decay—one to natural decay; such is the law of nature.

Among the many remarkable facts which recent statistics have brought to light, is the prevalence of consumption in all parts of the world, the hottest as well as the coldest. Year after year has seen consumptive patients expatriating themselves to profit by the supposed immunity which tropical countries enjoy from the ravages of pulmonic decay! Vain delusion! We learn from the statistical reports of the British army, that *twice* as many cases of consumption originate in Jamaica as at home, among European soldiers. Out of 51,000 troops serving in that island in the course of twenty years, (1817 to 1836,) there were attacked by consumption 661, or 13 per 1000; whereas, out of 44,000 troops quartered in England during the same period, 286 only were attacked, which is 6 per 1000. The same fact was ascertained with regard to the East Indies. Consumption is twice as prevalent at the Mauritius as at the Cape of Good Hope, although pneumonia and other diseases of the lungs are considerably more abundant in the latter colony.

This fact (the increased prevalence of consumption among Europeans proceeding to hot countries) has lately received a striking illustration. The lower orders of animals, it is well known, are equally with man liable to pulmonary decay, more especially those of the monkey and cat tribe. Mr. Miller, the intelligent superintendent of the Zoological Gardens, informs me, that until lately, in that establishment, *one-half* of the deaths in those orders of animals has been from consumption, the disease commencing prior to the animal's attaining its full growth. The great extent of this mortality suggested the idea, that it might be owing to some mismanagement, and this he believes to be the high temperature of the air breathed. By reducing this from 60 deg. and upwards to 50 deg. the health of the animals has of late improved. Visitors to the gardens may have noticed that some of the finest and healthiest leopards and tigresses have passed the last winter without any artificial warmth, in the open garden, and that the temperature of the monkey-house very little exceeds 50 deg.

From very early periods a tendency to develop consumption has been associated with particular trades. Those of glass-blowing, scythe-making and leather-dressing, have been denounced as especially injurious to the lungs. Statistics are calculated to clear up this point, because, if true, the proportion of male deaths by consumption, *in towns where those trades are practised*, ought to exceed the female deaths. Mr. Farr has kindly supplied me with data to test the correctness of this notion. From these tables we learn, first, that the male deaths in the four towns of *Birmingham*, *Sheffield*, *Worcester*, and *Newcastle*, exceed the female deaths in the proportion of 23 to 20; whereas in the three agricultural counties of Essex, Suffolk, and Norfolk, the female deaths by consumption are to the male deaths as 67 to 52.

TABLE exhibiting the Comparative Prevalence of Consumption in the Sexes in Town and Country Districts.

Locality.	1841.		Deaths by Consumption.	
	Males Living.	Females Living.	Males.	Females
Birmingham, Sheffield, Newcastle & Worcester	157,430	165,755	2357	2049
Essex, Suffolk, & Norfolk	509,496	531,182	5243	6740

Again, by comparing the deaths with the numbers living, you will perceive that the male deaths by consumption in the four towns are to the total male population in those towns as 16 to 1000; while in the three agricultural counties the proportion is as 10 to 1000. the ratio of female deaths to the female population *being the same in town and country*, namely, thirteen per 1000. The popular notion, therefore, is thus proved to be well founded.

A survey of all the facts connected with the origin and development of consumption confirms the great principle that this disorder is not (as some would have us believe) a modification of *common* inflammation, but that it is a true decay of the pulmonary apparatus, originating from very recondite and perhaps unappreciable causes. Sir James Clark, one of the latest and most acute writers on consumption, has introduced the term tuberculous cachexia, to express, with as much precision as the nature of the subject will at present allow, that condition of the body which tends to pulmonary decay.

Changes have taken place in the relative position of all other diseases by which mankind is removed from the world; they, like kingdoms, have their rise and fall, but consumption holds the same place in the catalogue of mortal maladies which it occupied in the infancy of statistical science, and probably in the earliest ages of the world.

Decay of the respiratory apparatus, therefore, must be viewed as the great gulph into which all improvements in medical science, and all ameliorations in the physical condition of man tend ultimately to drive the population Any measure which, like vaccination, or improved nursing, or the use of flannel, lessens the amount of mortality in early life, carries the junior population forward to the epoch when it becomes obnoxious to pulmonary decay. The progress of systematic decay may be checked by art, and thus may the value of human life be improved, but no statistical considerations warrant the conclusion that we possess any such controlling power over the course of pulmonary consumption.

INFLUENCE OF ACUTE DISEASE.

The third mode of decay of the human frame I described as "*rapid decay by acute disease or unseen violence*." The human body is not invaded by such external agents alone as are cognizable to our senses, such as arsenic, sulphuric acid, the bite of a mad dog, or a locomotive engine, but by various agents of a less palpable character, whose effects are not the less remarkable. We distinguish these hidden sources of disease by the term "*miasms, or morbid poisons.*" They steal insensibly into the system, and there effect ravages, sometimes so frightful as in a few hours to deprive the strongest man of all power, and even of *life* itself; others operate by a slower process, but with a result not the less certain or fatal. To the first class of morbid poisons belong cholera Asiatica, Egyptian plague, and the angina maligna, or putrid sore throat. To the second class belong small-pox, measles, hooping-cough, remittent fever, and typhus fever, besides which there are a variety of other morbid poisons which are less destructive in their effects, but which, nevertheless, prove occasionally the sources of death. Of this kind are erysipelas, syphilis, ague, and influenza.

These miasms, or poisons are of two kinds, those of animal and those of terrestrial origin. Small-pox, hydrophobia, measles, scarlatina, and cow-pox, are miasms originating from the animal body in a state of disease, and therefore called the *morbid animal poisons*. Again, ague and remittent fever, probably also dysentery and beriberi, and, perhaps, cholera, are the results of noxious miasms generated on the earth's surface by the decomposition of *vegetable* matter. These are distinguished as the diseases of endemic, paludal, or *malarial* origin. Each miasm, whether springing from an animal or an earthy source, has its peculiar mode of development; some affect the skin, some the bowels, some the blood. Whatever the mode be, it is the same, whether the poison invades the European or the Negro, the young or the aged, the strong or the weak. They all agree in their mode of imbibition. They correspond in the theory of their action. They are all, in short, pathologically associated, and whether designated as epidemic, endemic, or contagious maladies, they are to be looked upon as *agents interrupting the normal course of man's life in his progress to natural decay*. They chiefly prevail in the periods of infancy and manhood.

There are strong reasons to believe that in an earlier period of the world diseases of a miasmatic nature existed, which have since disappeared, while others have supplied their place.

The plague described by Thucidydes as having devastated Athens, during the Peloponesian war (429 years before Christ), does not correspond with any other known disorder, although it bears a general resemblance to scarlet fever. The same may be said of the plague described by Procopius as invading Constantinople and the neighbouring countries in the year 544 after Christ. Many pestilences which prevailed during the dark ages, and which are described by the physician-monks of those days, cannot be recognised as the diseases of modern times. There are the strongest grounds for believing that small-pox did not commence its ravages until the year 622. If we may credit Constantine Africanus. measles first showed itself about the year 900 of the Christian era. Syphilis first appeared in 1598. The first accurate accounts which we have of the scarlet fever are in the year 1610, when that disorder invaded Spain. It was unknown in Edinburgh until 1680, for Sir Robert Sibbald, physician to King Charles the Second in Scotland, writing in that year, says of it, "That it was so recently introduced. and so little understood, that he would not venture any observations either on its theory or treatment." Scarlet fever did not invade America until 1735. Neither small-pox nor measles have yet reached our Australian colonies. Two years only have elapsed since scarlet fever assailed them. Horace says, that, in days long past,

"Nova febrium
Terris incubuit cohors."

That this should have happened need not surprise us.

We have in our own days seen two new miasms spring into existence. In 1798 Jenner made us acquainted with cow-pox. In 1817 cholera arose, like a black vapour, from out the Sunderbunds of Bengal, and has since carried death and desolation through every known country of the world, except those highly-favoured regions to which England, with a generous humanity. consigns the victims of crime, Australia and Van Dieman's Land.

It will, in after times, be noticed as a strange coincidence that thus, within twenty years of each other, cow-pox and cholera, the mildest and the most malignant of human maladies, the alpha and omega of the morbid poisons, should have originated. Whether this was accident, or whether, among the many inscrutable arrangements of Providence, cholera was ordained to be the scourge of mankind when small-pox declined, as small-pox arose, when earlier plagues had been banished, it is not for us to say. Reflecting, however, upon the origin and succession of epidemic maladies, it is impossible, I think, not to trace in them evidences of *design*. We may even venture so far into the regions of conjecture as to predict that nature has not yet exhausted her catalogue of epidemic

"And wide wasting pestilences."

There probably are others of "*the painful family of death*" still in the womb of time, to occupy the thoughts of physicians yet unborn, and to assume hereafter their station among

"The miseries which the inabstinence of Eve
Hath brought on man."

THEORY OF ZYMOSIS.

The several miasms now adverted to operate on the animal economy by a principle very analogous to that which, in the vegetable world, is called *fermentation*. This is no new doctrine, though as recently revived by the ingenious Liebig, who has invested this hypothesis with a strictly scientific character, it has all the charms of freshness. It is, in fact, one of the oldest doctrines in physic, and very striking is it thus to witness the revolutions of the wheel of science. !

Mr. Farr, to whose indefatigable labours every physician pays a willing tribute of praise, has done good service to pathology by substituting the term *zymosis* (derived from the Greek *Zumoo* to ferment) to express the mode by which the several morbid poisons operate on the *animal* economy. Zymotic diseases, therefore, will include all those which have hitherto been known by the name of *epidemic. endemic*, and *contagious* maladies. A change of phraseology was called for by the new aspect of science, and the term has been judiciously selected.

The destruction of human life by the zymotic tribe of diseases is very great. Upon an average of years, 350,000 persons die annually in England and Wales, of whom 70,000 are the victims of epidemic and contagious diseases, that is, 1-5th of the whole. The equalisation of epidemic mortality through a succession of years is very remarkable. Every year is distinguished by some prevailing, reigning, or master epidemic, during the continuance of which other epidemics decline. Thus, in 1838, small-pox was in the ascendant, and 16, 268 persons died of it throughout England and Wales. In 1839 measles predominated, and destroyed nearly 11,100 persons.

In 1840 scarlet fever was so general and so fatal throughout England that it destroyed more lives by 1-5th than small-pox did during its epidemic season. The deaths by scarlet fever in that year were nearly 20,000. The exact numbers were 19,816. Knowing, as we do, the average rate at which scarlet fever proves fatal, (6 per cent.) we are sure, that in the year 1840, there could not have been less than 360,000 cases of scarlet fever in England and Wales! Measles, hooping-cough, small-pox, however, declined. Everything teaches us, that when one avenue to death is closed, another opens, for "*noctes atque dies patet atri janua ditis.*" If children are saved from small-pox, therefore, it is only to fall into the power of tyrants scarcely, if at all, less inexorable.

TABLE exhibiting the amount of Exanthematic Mortality in England and Wales, during the years 1838, 1839, 1840.

	Year 1838.	Year 1839	Year 1840
Small Pox	16,268	9,131	10,434
Measles	6,514	10,937	9,326
Scarlet Fever	5,802	10,325	19,816
Total mortality by the Exanthemata	28,584	30,393	39,576
Total mortality throughout England and Wales	342,529	338,979	359,561

Besides the zymoses, the human body is subject to the assaults of many acute diseases of internal origin, which the old writers (probably with reason) attributed to a faulty condition of the blood and humours. They are naturally associated with the zymoses, not only from a like obscurity of origin, but because they occur at the same periods of life, run the same rapid course, and equally with them serve as interruptions to natural decay. The forms which they principally assume are, rheumatic fever, gout, pneumonia, hydrocephalus, and convulsions. They may be either of an inflammatory or congestive character. The ordinary labours of man are sufficient to excite some; others are brought on by atmospheric vicissitudes. A very large proportion of them, however, are wholly independant of exterior agency. Witness, in children, the variety of such disorders which accompany the process of dentition. Witness, in adults, the first appearances of gout and rheumatism.

The principal disorder of this class, which swells Mr. Farr's black book, is infantile convulsions; next to it is pneumonia, and near them stands hydrocephalus. Very nearly one-sixth of the total mortality of the country is attributable to these three diseases, naturally grouped together as being the eldest offspring of abnormal dentition.

The total amount of mortality by the diseases of this class, the fevers of internal origin, is 200 per 1000. The sum total, therefore, will give the following

Analysis of the Tables of Mortality of England and Wales.

	Per Thousand.
Deaths by old age, debility, and its associated disorders	175
—— chronic disorganisations of the viscera	225
—— the zymotic diseases	200
—— acute diseases of internal origin	200
—— consumption, or pulmonary decay	170
—— open violence	30
Total	1000

It thus appears that 30 per 1000 are the victims of open violence, the fourth and last of the classes into which I divided the several modes of human extinction.

Decay being my theme, I am prevented from entering on the consideration of the many interesting questions which violent deaths suggest; I will only state that they are exceedingly uniform, averaging throughout England and Wales nearly 12.000 annually. The number for the years 1838.39 and 40, were 11,727, 11,632, 11,594. This is, compared to the total mortality, as 32 per 1000; in reference to the population, it is as 8 to every 10,000 persons living.

RELATIVE DECAY OF THE SEXES.

Decay in the male sex is considerably more rapid than in the female. In the three years ending June 30, 1840, the total number of deaths among males throughout England and Wales was 518,006, while the deaths among females were only 499,058, giving an excess of male deaths, in three years, of 18,948.

After this statement, it cannot appear surprising to you that the number of females in any country should notably exceed the number of males. At the present time, in London, there are 996,000 females to 878,000 males, or an excess of 119,000 ladies. Coupled with this fact, and obviously depending on it, is the superior longevity of the female sex. There died throughout England and Wales, between 1st July, 1839, and 30th June, 1840, 5,247 females, aged 85 and upwards, whereas, of the same age, there died only 3,954 gentlemen, leaving what is called in the city a balance in favour of the old ladies of 1293. Among the females who died, 71 had passed the age of 100, but only 40 males.

There are only three diseases, common to the sexes, which carry off more females than males; they are consumption, cancer, and dropsy. The deaths by childbirth form but a very small fraction of the mortality in the female sex. The proportion is only 8 per 1000 of the total mortality; and as (unfortunately) half a million of children are annually born in England and Wales, and scarcely 3000 deaths take place in childbirth, so there is only 1 death to 170 confinements!

The researches of the registrar-general have brought to light some singular results with reference to the proportion in which acute diseases affect the two sexes. In the zymotic tribe the UNIFORMITY is quite extraordinary. Thus, out of 8194 persons dying of measles in 1840, throughout England and Wales, 4143 were males, and 4051 females, a difference of only 1.2. Again, out of 17,862 persons dying of scarlet fever in the same year, 8927 were males, 8935 were females, a difference of only 8! On the other hand, it appears that out of 14,806 dying of pneumonia, 8177 were males, and only 6629 females. Out of 22,787 dying of convulsion, 12,689 were males, and only 10,098 females.

The superior value of female life, which these and all statistical considerations tend to prove, and which our insurance offices, by their variation of rates, acknowledge, is not attributable to any differences in the original construction of the body, for man is built of stronger materials than woman, but first, to the smaller demand made upon her vital power during the middle period of life; secondly, to the healthier condition and temperature of the female mind; and, thirdly, to the lesser amount of toil and anxiety which, in a highly civilised country, falls to the share of woman.

MORTALITY FROM VARIOUS OCCUPATIONS.

I must say one word regarding the influence of trade and occupation on the average rate of decay in the human frame. The greatest foe to health and long life is poverty. Not only do all epidemic visitations fall with tenfold severity upon the poorer classes of society, but all descriptions of disease find in them their chief victims. It has been found, in France, that of an equal number of infants taken from among the poor and those in easy circumstances, the proportion of deaths among the former is as two to one.

Soldiers are, of all classes of society, the most obnoxious to severe disease and rapid decay. The result of an enquiry made by Mr. Edmonds (an eminent London actuary) into the loss sustained by the British army during the Peninsular war, has shown, that whereas in England the average annual mortality is now 22 to every 1000 of the population, the mortality among soldiers in time of active warfare rises to 160 per 1000! Out of this number, 40 per 1000 occur from wounds received in battle, and 120 per 1000 from disease and privations, and the other miseries attendant on war.

Happily, wars have ceased, and a gradual improvement is taking place in the value of human life. Every year a larger proportion of the population are carried forward to advanced age and die of the disorders which advanced age entails. In the time of the Romans, the expectancy of human life was not more than 25 years. A life was not then worth more than 25 years' purchase. Great changes have since occurred. The Geneva tables show that from 1750 to 1800, the mean duration of life in that town was 34 years and a half. In 1832 it was 45 years and 29 days! At Paris, among the easy classes, the mean duration of life is calculated at 42 years. In England, according to the calculations of Mr. Finlaison, it is now 50 years; so that the expectancy of life, the number of years which a child may be expected to attain, is double what it was at the commencement of the Christian era.

No one can doubt that if much of this improvement is attributable to the effects of medical science, more is due to the harmonising effects of the Christian religion—a religion which has reared the majestic institutions for the reception of the sick and indigent poor which overspread the land, in one of the oldest and noblest of which we are now assembled—a *religion* which has diffused throughout society that spirit of active benevolence which incessantly labours to lessen the sum of human misery and protract the period of man's decay.

PRIVATE COURSE OF OPERATIVE SURGERY.

By J. NOTTINGHAM, Esq., Member of the Royal College of Surgeons of London.

LECTURE VIII.

ARTICULAR AMPUTATIONS OF THE LOWER EXTREMITY.

GENTLEMEN,—From the articular amputations of the upper, we proceed to those of the lower extremity, the description of which will be the subject of the present lecture.

Removal of the toes, either individually or collectively, at the metatarso-phalangeal joint, is effected by operations so closely resembling the corresponding amputations of the fingers, that we may safely pass over this part of the description with the aid of very few words.

The fingers are occasionally amputated in their middle, or in the joints away from the metacarpus —as half a finger may often be useful. The toes, however, are generally removed at their root, as half a toe could be of little avail, unless, indeed, it were the great toe, the function of which is more important as a part of the basis of support than is that of the lesser members on its outer side.

Amputation of a single toe.

The surgeon remembers that the metatarso-phalangeal joint is deeper than the external aspect of the parts would indicate, and he remembers that he has arrived at it only when the edge of the bistoury is resting upon the broadest part of the phalanx to be removed, which is spread out to articulate with the metatarsal bone; a flap is cut from each side of the root of the toe, so as to leave a wedge-shaped piece of skin on the upper and lower aspect of the part removed, when the lateral ligaments are divided and the knife crosses the joint; the surgeon holds or twists the toe in such manner as to favour the progress of the knife and the division of the parts to be cut.

Great toe.—The anterior extremity of the metatarsal bone of the great toe being very large and projecting, apt to rub much against the shoe, and altogether more exposed than the neighbouring parts of the foot, we should endeavour to obtain a good flap for its protection whenever amputation of the whole of the great toe is required. This flap is chiefly to be obtained from its inner or free aspect; the knife being passed through the inner border of the foot from the dorsal to the plantar surface, at a point a little behind the joint to be traversed, whence it is carried forwards to be brought out opposite the extreme joint of the great toe; the knife next crosses the articulation, and in the last step, being laid flat on the outer aspect of the phalanx, it is carried forward to make an outer and shorter flap, which may be united with the larger and inner one to cover the end of the metatarsal bone.

The first flap being turned back, a little motion imparted to the phalanx will at once declare the position of the joint, which will then be hit without difficulty.

Should the end of the metatarsal bone be involved in the disease affecting the toe, it may be sawn or cut off with the forceps, or the whole of the metatarsal bone of the great toe may be removed by carrying the incisions backwards, and obtaining a suitable flap to cover the exposed cuneiform bone from the inner aspect of the bone to be removed; for this flap being first raised and turned back, the strong knife which is used for the purpose may be carried backwards towards the root of the bone to be removed, until it is stopped by its arrival on the tarsus. This part of the operation may be done without a second transfixing of the skin, if sufficient hold have been taken of the integument in forming the inner flap. A little movement forcibly imparted to the metatarsal bone will shew the situation of the articulation with the internal cuneiform, the direction of which is from within outwards and somewhat forwards; at least, such is the aspect on the dorsum of the foot.

But the joint at which the above operation is performed is somewhat large, and the muscular attachments which its bones receive of some importance; hence it is better where disease has not extended to this joint, to cut through the bone anterior to it, where its diameter is much less than at the articulation.

Little toe.—By operations similar to those just described, the little toe may be removed, either alone or accompanied by its metatarsal bone; here, however, the metatarso-phalangeal articulation is small—the corresponding bony surfaces having but little extent—so that a much smaller flap for the first operation will suffice. In performing the second, or the tarso-metatarsal amputation at the outer side of the foot, the flap corresponding to the course of the metatarsal bone may be cut of an oval shape, and dissected back by the bistoury; for in this way we more easily get over the projecting base of the bone to be removed, behind which the knife enters the joint to pass inwards and forwards in crossing it. If sufficient integument has been seized in forming the flap, the knife has only to be carried backwards between the two outer bones till stopped in front of the cuboid.

In this, as in the parallel case on the inner side of the foot, the bone may be cut through anterior to its connection with the tarsus, where the state of the parts allows its hinder extremity to be saved.

There are three amputations of the foot by which it is shortened in its entire breadth.

1. Of the five toes.
2. Of the metatarsus.
3. Of the fore part of the tarsus.

The latter is often called the operation of Chopart, and is performed with a view of saving the heel, and may be resorted to in cases where patients are unwilling to undergo amputation of the leg, on account of disease in the fore part of the tarsus; although it is questionable whether, for labouring people, amputation of the leg would not, in many cases, be a better operation.

In the first and the third of the above amputations, the corresponding parts of the foot are removed by tolerably even transverse operations; but, in the second, or the tarso-metatarsal amputation of the foot, there are marked irregularities in the position and direction of the joints which are opened. This remark applies more especially to the tarsal articulations of the two innermost metatarsal bones, that of the great toe being very forward, that of the second toe much more backward; the joints of the other three are in a slanting line, the outer extremity of which is farther back than the inner. One bone, however, of the set is differently situated from all the others; this is the second metatarsal, the root of which juts backward, between the internal and external cuneiform, to meet the middle cuneiform bone which supports it, and which does not advance so far as the other bones of the same name: but although these little irregularities be more or less in the way, it is not so difficult to surmount their annoyance as some would seem to think; for if, at the time of the operation, the assistant fix firmly the hinder part of the foot, and the surgeon, with his left hand, boldly press down the anterior part which he is engaged in removing, the dorsal ligaments will be at once put on the stretch, a touch from the point of the knife will make them crack, and the joints appear, and the direction of the latter being once fully exposed, the remainder of the operation is easy.

We now proceed to notice the method of performing the three operations above named; and, first, of the

Amputation of the Toes.

We will suppose the operation to be performed on the left foot—the toes of which the surgeon takes in the fingers of his left hand, the great toe being especially held firm. When the knife is applied inside the foot, a little anterior to the junction of the great toe with the metatarsus, it is then carried outwards across the roots of the toes, to terminate the first incision on the outer border of the foot, at a point which for the joint of the little toe corresponds with that at which the incision was commenced,—this line of incision being a little anterior to the true line of the joints,—the assistant pulls upwards (or backwards) the integument on the dorsum of the foot; the toes are then bent a little downwards, and the ligaments on the dorsal aspect of the joints being put on the stretch, they are easily opened with the point of the knife, which is next passed through each joint, setting free the root of each toe—and by bringing the instrument forward, and thus cutting out, sufficient flap is obtained to be turned up in front of the exposed metatarsal bones.

In very young subjects, where the heads of the metatarsal bones are not yet ossified, advantage may be taken of their soft condition, as they may be divided by a strong knife, and the operation afterwards completed as above mentioned.

After this operation, the limb should rest on its outer side, to facilitate the oozing of purulent or other fluid, from one end of the wound. Instead of the above operation, the circular method, as it is sometimes called, may be adopted, in which the first incision resembles that of the operation above described, saving that it is a little more in front of the joints; and a corresponding incision is carried across the roots of the toes on the plantar surface, the two being joined,—the soft parts are then retracted by the assistant, each joint being opened with the point of the knife, and the toes being removed, the dorsal and plantar integument will meet before the ends of the metatarsal bones.

We next describe the second of the three transverse operations—the amputation of the metatarsus. And, as an appendix to this, we may notice the mode of proceeding in cases where only parts of the metatarsus have to be removed.

Tarso-Metatarsal Amputation of the Foot.

The patient is placed on a bed—the foot to be operated on projecting from it, a little linen being folded round the toes.

The surgeon passes his finger along the outer border of the foot, and feels the projecting tuberosity of the fifth metatarsal bone, and recollects that the joint to be opened is behind it, and that its direction is not exactly transverse, but at once inwards and forwards.

On the inner side (especially in feet that are plump) there is not any tuberosity in immediate connection with the joint to be opened, which is large enough either for easy detection *before*, or, sure guidance *in* the operation, although there are three pieces of bone which may be felt to project somewhat in a thin foot,—1st, the posterior extremity of the metatarsal; 2nd, the internal cuneiform on which the former rests; and, 3rd, and most backward, the scaphoid—the joint to be opened being between the two former. It may be recollected, however, that if a line were drawn directly across the foot, from the point where we find the outer extremity of the articulations to be opened—immediately behind the projecting tuberosity of the fifth metatarsal bone—such a line, on arriving at the inner border of the foot would be about three quarters of an inch behind the joint there to be opened.

The trouble of finding the joints on the dorsum of the foot, will be much lessened if the dorsal flap convex on its anterior border be dissected closely from the upper aspect of the articulations—for, in making this flap, although it be turned back but a very little, a notion, more or less satisfactory, may be got of the position of some of the joints to be traversed.

Suppose, then, we operate on the right foot, we remember the general direction of the joints, and commence the formation of the dorsal section on the outer border of the foot, a little in front of the

locality determined as the position of the joint we seek to hit; the knife is carried across the foot to a point on the inner side, also a little in front of the articulation here—and a flap convex, forwards, is thus marked out, which may be a little dissected back as before-mentioned, the knife passing closely upon the bones.

The outer joints have the simplest arrangement and being more easily opened than the others, should have their turn first; and if the part of the foot to be removed be pressed down, and the section of the dorsal ligaments commenced at the attachment of the fifth metatarsal to the cuboid, the outer articulations of the cuboid, and two external metatarsal bones will be readily opened and exposed.

In opening the joints we have here to traverse, we may look at them as consisting of three parts, or sets, connected with the two outer, one inner, and with the two intervening metatarsal bones. We have already opened the two outer joints, the inner, or that connected with the metatarsal bone of the great toe may now claim our attention; this is not so very extensive in the transverse direction, but it is deep, from the dorsum towards the sole of the foot, and at this stage of the operation can only be opened internally and superiorly; the direction of the outer joint has been noticed as inwards and forwards—that of this inner joint as outwards and forwards; its direction, however, is nearer to the transverse than that of the other.

We have yet two metatarsal bones not disengaged,—and they are more locked in than were the bones we have partially liberated—these are the second and third counting from the great toe side of the foot; the joint of the second is nearer the ankle, that of the third three or four lines more forward; at the outer aspect, commencing where we left off the former disarticulation, the dorsal ligament, holding the third or middle of the five metatarsal bones to the tarsus, is to be divided, the joint being a little in advance of those previously opened on this side, and thus we shall have opened all the articulations to be traversed, saving that of the second metatarsal bone, which is received in front of the middle cuneiform, and held on either side of the other bones of the same name. By seizing the fore part of the foot over the middle of the bone yet locked in, and which alone remains to be liberated, and by this means imparting a little motion to its head yet fixed, we shall be enabled to see where the point of the knife should be applied, in order to set it free by the division of the dorsal ligaments; which division once effected, the joint begins to gape, especially if the depression of the anterior part of the foot be continued, and thus a way is made completely across the foot for the arrival of the knife on the sole, where it is to be carried forward beneath the metatarsal bones, so as to cut a flap suited in shape and extent for covering the front of the tarsal bones now exposed; this flap requires to be rather extensive, and cut in a slanting direction, its outer border being less advanced than the other.

So that by recapitulation, we might say there are three principal steps in this disarticulation connected with the liberation of three sets of bones such as we have already noticed; or, to state the thing somewhat differently, for the purpose of isolating more especially the one joint peculiarly situated, (that of the second metatarsal,) we might say, that after the dorsal section of the integument is made, and the skin a little dissected back, the three outer joints are first to be opened; next the inner joint, or that behind the metatarsal bone of the great toe; and lastly, that of the remaining bone, or second metatarsal, which will be more easily effected when the joints on either side of it have been opened.

There is another mode of proceeding in the performance of the operation first described, which is favourably spoken of by Mr. Liston, making the flap in the sole of the foot first—next dividing the integument on the dorsum—and lastly, opening the joints; the last step of the operation would thus be facilitated by the previous performance of the others.

Thus we have noticed the operations which shorten the foot, by transverse amputation of the toes, or of the metatarsus, as also of the two which take from its borders, amputation of the great toe with its metatarsal bone, and of the little toe with its metatarsal bone; but in certain cases of disease, it may be desirable, while preserving the borders of the foot, to remove something from its middle part, as we do when one or more of the three middle metatarsal bones is taken out along with its corresponding toe.

(To be continued.)

PENCILLINGS OF LIVING MEDICAL MEN.

MR. WARDROP.

This gentleman has already sat for his portrait, though not in our bureau. In a *miscellany* of *unmixed* panegyrics by that blandest of men, and most philosophic of biographers, Mr. Pettigrew, it occurs to us, that we have seen his name introduced with the graceful flourish of trumpets sounded in the motto, "*Fortes vixere ante Agamemnona.*" The complimentary point of comparison may seem, by no means, peculiarly happy to those who know that this revered successor of Agamemnon looks infinitely more like a Scotch fiddler than a Homeric, or even Hesiodic hero. But when we reflect on the numerous occasions on which he has breasted the frowns of his brethren, and we may add, those of fortune, the quotation appears not wholely inappropriate or undeserved. Such as he is, we shall proceed shortly to describe him without, like Homer, invoking or accepting the aid of any divinity either to dilate his virtues, or exaggerate his defects.

James Wardrop, Esq. M.D., and (why shall it be omitted?) "Surgeon to his late Majesty George the Fourth," is the son or nephew of an eminent practitioner of that name, who ranked high amid the votaries of Esculapius in the "Modern *Awthens*," half a century ago. James's uncle, for such we believe was the relationship, was in great repute. Not a dowager in that city had "meagrims" without his cognizance—not a denizen had "an affection" *for*, or rather *of*, "the national music," without his presence, and the nephew bid fair to succeed to all his profitable practice, when a restless disposition, or an ambition proceeding, perhaps, from conscious powers, lured him to London. Here, accordingly, soon after the beginning of this century, he made his appearance, and the peculiarities for which he had been somewhat remarkable in Edinburgh, became still more conspicuous, and operated, wonderful to say, in his favour. There, instead of going devoutly to church, and being methodically summoned out, as is the practice in the place, in the middle of a psalm, or the climax of a sermon, it was his wont to be seen, Sunday as much as Saturday, market-day and holiday, riding along the street as if he had been pursued by a plague, or to use a more apparently personal image—a dun. In London, Wardrop's horses, and his connoiseurship in respect to those valuable quadrupeds, were the first things that brought him into notice. He was called in—by the Earl of Rosslyn, we believe—to operate on the eye of a favourite mare of George the Fourth, then Regent, or Prince of Wales, and he succeeded to a miracle. In the estimation of those discerning people—the gentilities of society—who prefer royal chaff to plebeian corn, curing a prince's horse is an infinitely higher distinction than curing a prince's reasonable subject, and Wardrop's fortune was accordingly made. With all the sporting men who then fluttered round the illustrious "Fum," he became the fashionable "Doctor." He directed his attention especially to the eyes, and shortly afterwards set to work and wrote a book on that organ; and though the book may not warrant the stereotyped eulogy, "It will be valued so long as surgery is cultivated as a science," bestowed upon it by that discriminating critic, Mr. Wakley, it was undoubtedly a valuable contribution to ophthalmic science; and Wardrop, who is, we believe, partially blind of an eye, established for himself by it the merit of having seen as far into the subject as those gifted with more numerous avenues of vision.

The eye, however, was not the only point to which he directed his attention. Sir Walter Waller was then so completely in possession of the field as an oculist, that any attempt at successful rivalry was hopeless. Wardrop, who always had a keen eye to the main chance, was not slow in making this discovery. He accordingly soon launched out into other divisions of medical science: on most branches of Surgery he has written; and on almost all of these, if he has made no brilliant discoveries, he has at least contributed something new, and more things useful. On the "blood," on "aneurism," on "affections of the heart," &c., &c., he has written, and after his first work, his practice has been as multifarious as his topics.

No "pencilling" of Mr. Wardrop would be complete, which did not notice his connection with the *Lancet* when it *was* a journal; his determined opposition to the system on which the Metropolitan Hospitals are conducted, and the peculiarities by which his character is more particularly distinguished. We shall briefly allude to each of these in their order, and they may serve to "point a moral," if not "adorn a tale."

Shortly after the appearance of the *Lancet*, Wardrop was suspected of being a contributor to its pages; and assuredly to those familiar with his keen sagacity, his powers of sparkling ability, and unhesitating vigour pointed sarcasm, and by no means refined wit, —considerable of themselves and appearing the more striking now from the hopeless dulness, the moribund feebleness, that now pervade the fated periodical—afforded undoubted confirmation of the general opinion. When the celebrated "Intercepted Letters" made their appearance, the suspicion became universal, and Wardrop has been unanimously allotted the honour and the obliquy, the reward and the penalty attendant on these famous productions. The articles themselves have certainly been over-rated; no one who calmly reads them now, can conceive how they should ever have set the College of Physicians, the heads of Surgeons' Hall, and even the dull "topping" members of the Apothecaries' Company in a ferment. But this at the time was their result. Sir Henry was in an agony at the bold affirmations of his "twaddling platitudes" and his "truckling practices,"—the grave Sir Benjamin felt alarmed lest the world should imagine that his philosophy was assumed,—and even the respectable Mr Fuller, who keeps a shop in Piccadilly, and presides, or presided over the larger drug establishment in Puddle-dock, considered it necessary to evince, or affect indignation at the liberties used with his name. All their inferior satellites deemed it a matter of prudence to exhibit their wrath at the unceremonious use of their own and their master's patronymics; and the rest of the profession enjoyed, for the most part, the exposure of their supposed proceedings.

Wardrop of course was in raptures at the success of his sallies; he rubbed his hands in extacy on witnessing the mischief he occasioned, but in the end we fear it was the fable of the Stork and the Frogs reversed. What was amusement to the bystanders was eventually death to himself. The whole body of west-end

practitioners, (who if the *tails* and even the dirty tails of the *aristocracy* are the *heads* of the *profession*) made a dead set at the daring wit; Brodie united with Cooper, Chambers with Clark; all the retainers of either followed the example, and men became united in this cause who could have been united in no other. The combination decided that Wardrop should be excluded not only from their councils, but, if possible, from practice, and the design was sternly carried out. He required no hint to leave their society; he had seldom sought their company, and seldomer still did it happen that his unfrequent presence left no reminiscence of his sting behind it. If Mr. Wardrop's presence had been merely shunned at the meetings of his offended brethren, we should have found no fault with their conduct. But against the more extended *system* that was adopted to crush him we must unhesitatingly protest.

If our regret be great for the outraged enemies who knew no inactivity for their revenge till its victim was ruined, what must be our indignation against Mr. Wakley for the course he took.—So long as Wardrop's letters were continued, the ingenuous editor of the *Lancet* extolled him to the seventh heaven. He elevates every one who "bring grist to his mill." 'Tis their sole but adequate remuneration. In the pages of the former *Lancet*, Wardrop was placed at the head of modern surgery, and it was almost broadly declared that he had outstripped all *past*, and had left nothing to be done by *future* surgeons. But, when the letters were completed, and the object attained, the tables were turned. Lawrence, Liston, or some other lecturer, was elevated to the pinnacle of modern surgery, and Wardrop was precipitated to the pedestal, to be as quickly succeeded by others when Mr. Wakley (who then attended to his journal) found them no longer useful for his purpose. Some wretched imitations of the "intercepted letters" have been given subsequently, but they are evidently the emanations of some drivelling dunce, who thinks slander sarcasm, and ribaldry wit; some promoted errand boy put to the service on the busy coroner—the *medical* coroner—discovering that his *congè* to Wardrop was premature.

On the second leading point in Wardrop's career, we presume he is now equally at issue with his consistent friend—we mean his undeviating opposition to the system of mammonism and nepotism on which the metropolitan hospitals are managed. On his arrival in the metropolis, Wardrop naturally looked for a position in one of these institutions where his abilities might be displayed, but he calculated without his host. He soon discovered that without a system of corruption, from which the *honourable* man will, and the *poor* man must, shrink, or a career of sycophantic subserviency which every man of heart will disdain, it was a vain hope, that of securing a place within their precincts. His design and his desire were accordingly abandoned; he contemplated, we believe, for some time, the establishment of an hospital of his own, but the attempt was never realised. Almost every one who has endeavoured to form private schools for the dissemination of instruction has failed, or sunk beneath the opposition which the united monopolists bring, either openly or insidiously, to bear upon the point, and Wardrop, if the design were ever seriously entertained, quickly exchanged it for the safer course of ridiculing and exposing the institutions which had done so much to injure him.

This, however, is a course that is not to be pursued with impunity; the monopolists retaliated, and some peculiarities in Wardrop's character gave them scope for retaliating with effect. To these, our readers may readily surmise it is not our province nor our intention to allude. Private character we hold to be unassailable so long as unattended with public detriment, and in point of morals, Wardrop, for ought we know, may have quite as pure a vision as any of those who expatiate on the magnitude of the optical motes which deform their more unfortunate brother.

Personally, Wardrop is a stalwart man. He must at one period have stood more than six feet high, but the pressure of sixty years has diminished his gait. His countenance is shrewd, and possesses a power of expression greater than is to be found in almost any other man. His command over the facial muscles exceeds any conception that can be formed: with the utmost ease he will threw an appearance of grief or concern into one side of his face, while he look gay or is laughing at you on the other. This wonderful power is cited as the worst feature in his character. It seems to imply in him no sincerity. Let those who know him better, speak as to the justice of this inference. Originally somewhat haughty in his manner, he has in great measure laid aside in personal contact, this unfavourable characteristics. His cynicism however is an evergreen. It is not so *openly* demonstrated, but he attacks with ten-fold force the unhappy victim in his absence. Woe betide the man on whom Wardrop opens the flood-gates of his abuse; the Billingsgate flows in a quiet but perpetual stream, for the utterer's command of language is considerably greater than his judgment.

Yet let it not be inferred from this, that we consider Wardrop deficient in judgment. An opinion of this nature is, we are aware, abroad in the profession, and, doubtless, it may find votaries in the ranks of those discriminating persons in whose estimation sullenness passes for sagacity, and a silent, solemn fool for an oracle of wisdom; but we hold it to be as unfounded as unjust. Wardrop doubtless might, like others in the craft, pass as an oracle if, on being consulted, he were to favour his patient with a curse or a grunt, and at once pronounce an opinion, write out a prescription, or pocket his fee; but in the minds of those who are capable of judging, the result would be otherwise. A man of sense will discern a fund of real information, a profound knowledge of the human constitution, a rare power of diagnosis, and keen insight into the causes which regulate health and disease, in the enormous mass of verbiage with which Wardrop overloads every case; though, perhaps, for the benefit of those who are unable to appreciate such lore, the explanation might, in nine cases out of ten, well be omitted. Wardrop, however, seems to have arrived at a different conclusion, and as he is now by no means pressed by time, (for patients are to doctors what friends are to other men in adversity,) he invariably, like the traveller in the sentimental journey who distributed flattery so lavishly, deals out his wisdom in larger doses. Yet, with all his disadvantages, he possesses as much knowledge, and power of bringing it to bear upon a point, as almost any professional man of the day. His practice has embraced, and he has written on almost every subject connected with medicine and surgery; and if he has seldom evinced the deep knowledge of those who have devoted themselves to an exclusive branch, he has risen superior to mediocrity in all, as well as left traces of an original thinking mind on almost every one of the multifarious objects he has touched. A correct taste in matters of art, an extensive knowledge of the mysteries of horse-flesh, it may be added, are among the list of his extra-professional accomplishments, sharing from him the attention which most of his medical brethren more wisely, perhaps, devote to their own pursuits. These topics, however, are foreign to our columns; and still more so is Wardrop's connection with politics, on every division of which he speaks, and, it is said, has written with equal alacrity; adapting himself, if his enemies are to be credited, with the happy readiness of the Vicar of Bray, to the taste of his customers, whatever they may be. He has, however, been a consistent *medical* reformer. He is more disposed in conversation for needless controversy than undeviating concurrence; and it must be admitted, that on most occasions he shows an apparent absence of sincerity, and seems equally disposed, for argument, if not interest's sake,, to range himself on either side.

In summing up our remarks, we should be wanting in our duty to our younger readers, not to draw that moral from Mr. Wardrop's career, which is of such priceless value to those who know how to appreciate it, and which, unpresented, would have left us without a reason for withdrawing the curtain with which time has already almost entirely enshrouded the person and character of the subject of our sketch. Mr. Wardrop s life tells us, in letters of gold, that *it is possible to have ability, and even industry, and yet neither to reach eminence nor maintain respectability.* The "wisest of mankind," Bacon, became one of the most wretched, because he was "the meanest of mankind." No affluence of good qualities can make up for a dearth of principle, of which, if we cannot say as Juvenal said of Prudence, that no divinity is away where it is present, we may at least safely affirm that none is present where it is absent. The curse of heaven which made "the tears of dotage" flow from the eyes of a Marlborough, or exposed Swift in his last hours as "a driveller and a shew," is no worse visitation than that which a clever man precipitates on his own fortunes, who aims at passing through life without a holy rectitude of intention, and thorough honesty of action. We will not enlarge on this fearful topic, but it will be well if shipwreck to one serve as a beacony to man.

Philo-Probe.

Arsenic.—According to M. Chatin, arsenious acid is absorbed by the respiratory as well as the digestive and cutaneous surfaces. It has very different effects on different animals: its poisonons qualities seems to develop themselves most lightly in those whose respiratory and cerebro-spinal nervous systems are most highly developed, and in whom the poison is the most rapidly eliminated in the urine. The presence of a large quantity of fluid in the pleuræ of animals killed by arsenic is a remarkable occurrence.

Naphthaline.—Has been employed by M. Emery in the treatment of psoriasis and lepra vulgaris, twelve cases out of fourteen in which it was tried having been entirely cured by its use. M. Emery recommends its application to the skin in the form of an ointment composed of an ounce of lard. Considerable irritation is sometimes produced; but allayed by emollient affusion and cataplasms, and the remedy usually effects a cure in a few weeks or months. No particular course of diet is enjoined.

The following is Caspar's formula for the electuary of copaiba:—

Amygd. decort.	ʒvi.
Althææ pulv.	ʒj.
Catechu	ʒss.
Bals. Copaib.	ʒiij.

M. Orfila was the first, chemically to demonstrate the presence of arsenic in all the organs of animals poisoned with it.

PERISCOPE OF THE WEEK.

Vital Periodicity.—1. What effect, asks Dr. Laycock, of York, have barometric variations on animal life, and especially on the phenomena of epidemics; Huxham specially refers to the phenomena of intermittent fevers as being probably influenced by barometric variations through the varying pressure of the atmosphere on the veins. More recently Sir D. Barry took up both the pathological and physiological views of Huxham, and in the same spirit observes, "It being now evident that the blood in the veins is placed under the influence of atmospheric pressure, it would be curious to trace the connection which appears to exist between disease generally—intermittent fever, for example—and the daily atmospheric variations." The reader will see at once that facts countenance these speculations. 2. Has the electricity of the air, or the magnetism of the earth, any influence on vital phenomena? If any, we may infer *à priori*, that the results would be seen in the nervous system. Now, according to the table, the period of increased excitement in the insane commences when the electric tension of the air, and the variation east of the magnetic needle are at a minimum, and *vice versâ*. The unpleasant influence of thunder-storms is well known to persons of a nervous temperament, and to those predisposed to disease of the nervous system, and as these occur most usually in the evening we should look for nervous attacks at that time. While writing I took up the fourteenth volume of the "Edinburgh Medical and Surgical Journal," and found in it twenty-four cases of apoplexy, detailed by Dr. Abercrombie. The time of attack is mentioned in seventeen; ten of them took place in the evening, seven in the morning. A correspondent of the "Magazine of Natural History" refers a curious sound *heard at night*, previous to a change of weather (and which has been attributed to some unknown bird), to "that peculiar singing in the ears which often precedes a change of weather, and is caused by the alteration in the weight of the atmosphere (electric tension?) and the diseased state of the auditory nerve. I have heard it in almost every variation of sound, and I have noticed that the very high notes usually prognosticate rainy weather," &c. An easterly wind always aggravates the pain in neuralgic affections. I have had a patient with facial neuralgia, who, by his sensations alone, could detect a very slight change in the wind to the east during the night. It also induces a relapse in those who have already had ague. Mr. Barlow, when making observations on the variation of the needle, noticed on several occasions that a cold, cloudy morning, with the wind easterly, was very unfavourable to the increase of the easterly deviation. At Buenos Ayres the north wind is the general disturber; it puts everybody out of humour, and makes people so quarrelsome that the police anticipate a greater number of cases of quarrel when it blows. Sir W. Parish says that the better classes shut themselves up in their houses while it prevails to avoid mischief. In women it occasions headaches. It also turns meat putrid, curdles milk, and spoils the bread. Everybody complains, and the only answer returned is, "Senor, es el viento norte." The proof that this state is connected with electric changes is, that it is usually terminated by a high wind, or hurricane, from the south-west. 3. Have the sun's rays any direct influence on animal life? Dr. Prout supposes that the diurnal variations he noted in the consumption of oxygen are regulated by the presence or absence of the sun. Light is undoubtedly necessary to the respiration of plants; they cannot excrete carbon in darkness. M. Edwards' experiments on tadpoles kept in darkness are well known. They were never metamorphosed into frogs, but grew to be gigantic tadpoles. Mr. Barlow, observes, with respect to the magnetic needle, that the amount of deviation does not entirely depend upon the intensity of the sun's heat, but rather on the intensity of its light. 4. What is the nature of the connection between the diurnal esoteric changes in vital phenomena and the exoteric influences just analysed? On this question I would remark, that we must first understand *the law of habitual recurrence* of vital phenomena before an answer can be given in the least degree satisfactory. Indeed, the whole subject is too imperfectly known, and the facts are too few, and those few too incorrect, to admit of an attempt at analytical comparison. I have examined many volumes for cases, in hopes of finding exact dates, but with the most meagre results. Some of the facts bearing on the question are quite unexplained by any hypothesis extant. For example there are several flowers which (like several species of insects) are perfected without reference to the light or warmth of the sun, and only at certain hours of the day. Linnæus, in his "Philosophia Botanica," divides the day-blooming flowers into three classes, the meteoric, tropical, and equinoctial. Those of the first class are influenced as to their blooming by the state of the weather; of the second by the length of the day; but those of the third open and shut at a fixed and absolutely certain hour. From the habits of these last Linnæus formed his *Horologium Floræ*. If a *mesembryanthemum* be placed in a window facing the east, so that it shall have the morning sun full upon it until twelve o'clock, it will, nevertheless, remain closed until two o'clock, when it will open although the sun's rays are off it. The observations of Reaumur on certain ephemeræ (quoted in my last communication) are quite analogous; neither cold nor rain retarded their exclusion from the pupa during the hours at which they exclusively broke forth, namely, from eight to ten o'clock, p. m. We can only explain these facts on the suppositions, either that plants and insects are governed by habit like ourselves, or that there is some external influence guiding their movements, of which we are quite ignorant. Both, indeed, may be in operation. All phenomena of this nature are exceedingly worthy of the attention of the philosophic naturalist, and present an absolutely novel field of research.

Method of Analysis in Cases of Poisoning with Muriatic Acid. By M. Orfila.—Long since Orfila asserted that, in order to prove the presence of free muriatic acid in the contents of the stomach or intestines, or in organic liquids suspected to contain this acid, it was necessary to submit them to distillation. M. Devergie has recently stated that the muriatic acid is tenaciously retained by the organic substances, and cannot be demonstrated by distillation otherwise than by heating the residue completely to ash, which may easily lead to deceptions, arising from the chlorides contained, either normally or accidentally, in the contents. Bergouhnioux agrees with Devergie, and advises the addition of sulphuric acid previous to distillation, to facilitate the liberation of the muriatic acid. From these statements Orfila has been induced to institute a long series of experiments on the subject, and he finds that the assertions of Devergie and Bergouhnioux are correct when distillation is not carried further than to the consistence of a syrup; the animal substances do *not* allow of the muriatic acid escaping at that temperature; with vegetable substances it is not the case to the same extent. But a portion of the muriatic acid is liberated even from animal substances and mixtures, when the distillation is carried on at a gentle heat until the residue is perfectly dry. More muriatic acid, it is true, is given off when the residue is carbonified; but then the empyreumatic products of decomposition, which react on salts of silver, render the reaction of the distilled liquid doubtful. In case sal-ammoniac, or any other volatile chloride, should be present, they also pass over under the above circumstances, but they do not impart to the fluid any acid reaction, which must also exist together with the action of solution of silver, if the presence of muriatic acid is to be admitted. The use of sulphuric acid must be discarded, as the chlorine present in the chloride may be converted by its agency into muriatic acid. The liberation of the muriatic acid is however very much facilitated if the liquid under examination is previously treated with alcohol or precipitated with tannin. Orfila advises accordingly the following method of analysis in cases of poisoning with muriatic acid:—All the fluid contents of the intestines, and whatever may have been voided by vomitings or evacuations, are collected, then tested as to their possessing an acid reaction, in which case they are placed aside. The solid contents, as also the œsophagus, and the intestines (which are cut into pieces), are boiled in a retort with distilled water for 5 or 6 hours, the evaporated water being constantly replaced, and what distils over collected in a receiver and placed aside. The product contains in general no muriatic acid. The decocted is now added to the above-mentioned liquid substances, and the whole precipitated with a concentrated solution of galls until opalescence appears, then left to subside; and the tolerably clear reddish yellow liquid conveyed into a large retort, the recipient of which should be kept very cold, and distillation carried on at 212° Fahr. The first nineteen-twentieths of the product are in general perfectly free from muriatic acid, although they sometimes possess a faintly acid reaction. They are placed aside, and distillation now carried on to near dryness, but with great care. The product thus obtained decidedly contains muriatic acid, if any were present. The precipitate with nitrate of silver often increases if the product be boiled for some time with nitric acid, which at the same time redissolves any silver that may have been reduced by the organic substances. It cannot however be denied, that even in the case where the product of distillation has an *acid reaction* and affords chloride of silver, the presence of free muriatic acid is, it is true, very probable, but not entirely certain, since the acid reaction may arise from some other free acid, and the chloride of silver from volatile neutral chlorides. And even with a decidedly acid reaction, it is only possible to conclude, as to poisoning by muriatic acid, when the amount of precipitate is very considerable, combined with the anatomico-pathological results, and the appearances of disease previous to death, as the presence of free muriatic acid in the stomach, and sometimes to a considerable amount, has been most satisfactorily proved.

The Starch Bandage.—M. Lisfranc, says Dr. Johnson, objects to the immediate application of this in simple fracture without displacement—as, after the subsidence of any tumefaction or infiltration, the portions of the bones may become displaced, and yet we are unable to ascertain that this is the case. To ensure the case doing well, he considers the daily inspection of the part is necessary, which may be obtained by making a longitudinal section through the bandage—and with this precaution he adopts the starch apparatus in simple cases. Where, however, there is displacement of the ends of the fractured bones, the swelling which is present may prevent the surgeon assuring himself of the exact adaptation of the parts; and, after such swelling has subsided, or, by reason of the atrophy resulting from long-continued pressure, a considerable interval may be left between the apparatus and the limb. The exact contact of the parts may also disappear during the application or drying of the bandage. But if the fracture be very oblique, even by aid of an opening in the bandage, how are we to re-adjust the parts when displaced, or how apply any additional compresses or splints that may become necessary? The number of badly-united fractures after the use of the starch bandage that the author has met with confirms his objections to it. It should not be employed in any case having a tendency to displacement, until the callus has become sufficiently solid and straight to prevent any fear of a vicious direction resulting. It is also objectionable when any wound of the soft parts complicates the fracture—especially from the possibility of the occurrence of suppuration, and the difficulty of giving issue to the pus. It frequently occasions by its hardness irritation and excoriations of the skin—a circumstance of some consequence in the aged. Patients commit a great error by attempting to use their limbs too soon after the application of this bandage. The author alludes to two cases of *Fracture of the Spine* in which the advantage of the antiphlogistic treatment was conspicuous. Each patient was submitted to nineteen bleedings, and the application of many leeches within twenty-one days—accompanied by rigid diet. In one case the paraplegia was removed, and in the other the patient could walk upon crutches.

Preparation and Properties of Cathartine.—This substance, the bitter principle of senna, is obtained in the following manner:—The decoction of senna leaves is precipitated with sugar of lead, filtered, the excess of the lead salt removed by sulphuretted hydrogen, again filtered, and the solution evaporated to an extract, which, on being treated with alcohol, leaves behind a gummy brown substance. The solution in alcohol contains a peculia extractive substance, and moreover acetate of potas-

and must be treated with sulphuric acid to remove the potash; to the filtered liquid carbonate of lead is added to take away the excess of sulphuric acid, the lead then removed by sulphuretted hydrogen, and the liquid evaporated to an extract. What is left is the active principle of the senna leaves, *Senna bitter*, or *Cathartine* of Lassaigne and Feneulle, who discovered it. It has a dark reddish yellow colour, does not crystallize, has a peculiar smell and a bitter nauseous taste; it attracts moisture from the atmosphere, dissolves in water and in alcohol, but not in æther. It does not afford ammonia on distillation. It is decolorized and destroyed by chlorine, but is not affected by iodine. Alkalies give it a darker colour; it is precipitated of a brown colour by sulphate of alumina, light yellow by di-acetate of lead and by tincture of galls, but not at all by tartar emetic and neutral acetate of lead. It contains no vegetable alkaloid, and does not combine with acids. According to Feneulle, the *Folliculi sennæ* contain the same constituents as the leaves. Peschier and Jacquemin state that they have found cathartine in *Cytisus alpinus*, *Anagyris fœtida*, and *Coronilla varia*; but this is very doubtful, as it is scarcely possible to prove the perfect identity of substances which cannot be obtained in a crystalline state, and possess, moreover, scarcely a single characteristic property.

On Sprains.—These occur especially in the ginglymoid joints. Their ligaments are numerous and strong, and although, by the resistance they offer to external violence, they frequently prevent luxation, yet the traction and torsion to which they are subject render them very liable to become sprained. The parts of the orbicular joints are so differently disposed, that, while their movements are more varied and extensive, their liability to displacement is greater, and the sprains occurring in them are slight and infrequent. Even a simple sprain, when neglected, may lead to a serious secondary affection, especially in the scrofulous, gouty, rheumatic, or syphilitic subject —in whom it may, as also sometimes even in healthy individuals, terminate in true white-swelling. Refrigerants are useful when applied very soon after the accident; but they must be applied without intermission, (lest an injurious re-action be set up) and discontinued as soon as inflammation is observed, which they will only aggravate. The application of bandages, steeped in cold and astringent fluids, and the use of irrigations, are disapproved of by the author. As soon as the practitioner sees the patient, whether cold has been had recourse to or not, and even during its application, he must bleed him from the arm, for the purpose not only of counteracting inflammatory action, but also of facilitating absorption of the effused fluids. Leeches are not proper, and especially when applied to the ecchymosed parts, where they may cause gangrene. If the subject will bear it, the bleeding is repeated two or three times in twenty-four hours, and afterwards revulsive depletion is to be practised at some distance from the seat of injury. A large emollient cataplasm is the best local application. In five or six days the pain will have disappeared, the effusion become absorbed, and a mere œdematous condition of the parts remain. Discontinuing the above means, we now resort to compression by means of agaric and a circular bandage, properly adjusted, however, according to the peculiarities of the joint affected, or the swelling may become increased rather than diminished. In this way the most violent sprain may become cured in fifteen or twenty days, and the joint restored to its normal volume and movements. Another week may elapse before gradual attempts at walking are allowed. None of that debility of the joint, which so often leads to relapse in the common mode of treating the affection, is present. In some cases, a greater degree of pressure, by means of graduated compresses, is required. In others the effusion resists all these means, when diuretics may be prescribed with great success; and, in feeble subjects, these medicines may be advantageously substituted for the bleedings. Purgatives are also of great utility.

On Fistulous Sores and accompanying Indurations.—As fistulæ may be the cause of the indurated state of the parts which surround them – so frequently indurations maintain the open state of fistulæ. Thus, M. Lisfranc relates cases of induration and callosity of parts accompanied by fistulæ, in which the latter were relieved in proportion as the former were removed by antiphlogistics, emollients, compression, iodine, &c. When, however, the fistula still continues unhealed, an injection of the *chloride of soda* seems to have great power in inducing a plastic secretion, and causing cicatrization of such parts of the skin as have become denuded of cellular tissue. If the injections are used for several days without beneficial effect, they should be suspended, and compression then often proves of advantage. They usually fail because they are not used perseveringly enough, and the alternations with compression have not been frequent enough—say, six, eight, or even ten times repeated. But the great error in the treatment of all chronic affections is this want of perseverance in the use of remedies, and the hasty adoption of a variety of new ones, before any one of the number has had a sufficient trial. If the fistula be a recent one, it may be cured by mere emollient injections, and these will sometimes succeed, even in obstinate cases, when more active measures have failed. The solutions of nitrate of silver, or of the proto-nitrate of mercury, are also valuable injections. This last must be cautiously and sparingly used—for the mere touching the fistula with it in a portion of its track, will, in many cases, induce the uniting process throughout its course.

Procidence of the Uvula.—The influence of the procidence of the uvula in exciting other affections is too often overlooked. It may produce, maintain, or aggravate inflammatory affections of the throat, of the lungs, and of the larynx; so, also, its excision is sometimes the only mode of combating certain cases of chronic gastritis. When the procidence arises from acute inflammation in its early stage, or from chronic inflammatory action, local bleeding, pediluvia, astringent gargles, or the application of nitrate of silver, are the means to be adopted. But when active inflammation, occurring in a robust person, is present, a general bleeding should precede these. When the inflammation has become truly chronic, or the organ engorged with serum, or paralysed, small applications of pepper, ginger, or caustic may be had recourse to. When the affection resists all these means, and especially if it puts on a scirrhous character, the removal of the entire organ can alone suffice, for if a part be merely removed the malady is frequently reproduced. The author considers a very needless multiplication of scissors has been made. Their points should be blunt and their blades curved. Although, in some cases, when paralysis of the part exists, the patient does not suffer pain during the operation, but in other cases he does so most grievously. After the removal of the uvula, we must carefully treat the persisting chronic inflammation of the throat, or a continued hoarseness of the voice may remain.

On Urinary Calculi.—To obtain the most distinct sensations, we place the stethoscope, having removed the plug, upon the body of the pubis, or upon the posterior part of the sacrum. If the sound be introduced into the bladder, void of urine, and containing no calculus, the motions imparted to the instrument produce a noise like that of a pump in action. When there is a little urine in the bladder, a sound like that made by working the saliva in the mouth, is sometimes produced; but, if a stone exists, a very distinct tinkling is heard, or else sounds resembling those resulting from filing a compact or a porous body. When, as an experiment, some soft tissues have been introduced into the bladder, sounds similar to those heard in the empty bladder, or when it contains only a little urine, were perceived.

Cellular Cysticercus under the conjunctiva.—M. Florent Cunier was called to see a patient who had a small vesicular swelling on the conjunctiva of the right eye, near the cornea, the result of an attack of inflammation, following a blow from a butterfly, which had struck against the eye, and left one of its feet in the folds of the membrane. At the time M. Cunier saw it, it was about as large as a pea, and had several enlarged and varicose vessels feeding it; it was not painful, but impeded vision by its encroaching on the cornea. M. Cunier first punctured the vesicle, and the next day dissected it away with a pair of curved scissors. On examining the swelling after it had been withdrawn from the water into which it had been plunged, it was found to represent a transparent, vesicular body, with a swollen extremity, like a caoutchouc bag. When examined under the microscope, it was recognised as a cellular cysticercus, analogous to those that have been already observed in the same part by Baumès, Hœring, and Estling. The four suckers and the double circle of hooks were perfectly distinct. After having separated the worm from the remaining portion of cyst, and having allowed it to be in water for two hours, it was found to have folded itself on itself, and looked like a piece of crystalline that had been in water for several days; the oblong spot, spoken of by M. Baumès as consisting of the retracted head and neck were very distinct.

A New Blue Pill.—Dr. G. F. Collier recommends a compound of the sesquioxide of iron and mercury, as preferable to the ordinary blue pill. Its advantages are:—It is made in five minutes, the ordinary blue pill requiring a week (in reality, many hours, not days). The globules are not visible, even by the microscope; it is uniform in its appearance and effects; it makes a smoother pill, retaining its form more permanently; it salivates in a few days in the usual doses, the presence of the iron preventing the wear and tear of the frame under the effects of the mercury, and the powers of life are not so much (scarcely at all) prostrated under its use; it is, consequently, peculiarly eligible for the strumous, irritable, and anemic constitutions. It is prepared by rubbing together one part of the sesquioxide of iron, two of mercury, and three of rose confection, until the mercurial globules cannot be distinguished.

Worms in the Bladder.—Dr. J. M. Waddy, of Birmingham, relates a case of Uterine Hæmorrhage of obscure origin till, in the early part of July, he discovered a worm in the urine, dead, gorged with blood, about ten inches long, and of the thickness of a goose-quill, with a long and extremely sharp-pointed tail, exactly resembling one of the rat-tailed larvæ, but in a state of great enlargement. He immediately injected the bladder with oil and lime-water, and several worms of the same kind were discharged, and the patient remained free from recurrence of the hæmorrhage for several weeks. The bleeding, however, returned, and was again and again removed by the injections, worms of the same appearance being discharged, some of them alive, but the greater part of them dead. The patient, however, never properly rallied, and died in December, 1842. The body was not examined. Dr. Waddy is inclined to the opinion that they made their entrance from without, a supposition not at all contradicted by any unusual habits of cleanliness upon the part of the patient.

Intradental Abscess.—Dr. Castle, of New York, to arrest the suppurative process, and produce "a perfect cure," recommends the following formula:—

℞ *Ox. arsen. alb.*, 1-20th gr.;
Pulv. gall., ¼ gr.;
Opii gr. ss;

Made into a paste, and applied into the cavity of the tooth, and kept there either by a softened piece of wax, or a pledget of lint saturated with creosote; this will entirely remove the disease in one application. All that is necessary afterwards, for two or three days, is to apply a little dry sulphate of lime, introduced into the tooth, to absorb the little corruption left there. The tooth may then be sponged out with eau de Cologne, and filled or stopped, either with gold foil or a paste composed of marmora and silica. He has, he says, followed this practice for fourteen years, and with the exception of two cases, has never failed to eradicate the disease, and effect a perfect and permanent cure.

Nervous Ophthalmia.—The chief symptoms are photophobia and lachrymation. The conjunctiva is somewhat reddened, but there is no change in the cornea or inner coats of the eye. The antiphlogistic treatment fails in these cases. M. Lisfranc has often found the smearing a little moistened, good *extract of belladonna* upon the temples, and around the base of the orbit night and morning, has effected, in a few days, the cure of cases which had long resisted other means most obstinately.

Agents Influencing Capillary Circulation.—M. Poiseuille states, that alcohol, acetate of ammonia, and nitrate of potass, accelerate the circulation of fluid in the capillaries, both of dead and living tissue.

TO CORRESPONDENTS.

Chemistry.—*Many of our readers will hear with regret, that in catering, by the publication of Professor Bra nde's lectures, to the eager curiosity felt just now cn the subject of Organic Chemistry, we have incurred the necessity of suspending for about three months the Course on Chemistry, by Dr. Scoffern, when we shall again have the pleasure of resuming them.*

We have been unavoidably prevented publishing our "Drug Price List" *this week. It will certainly appear in our next number.*

Messrs. Byfields, Limerick.—*The number is not sent from our office; all monthly parts must be ordered through cur bookseller, We have, cf course, no means of transmitting them free.*

Mr. Oliver.—*Mr. Bullock, Conduit-street; Mr. Hodgson, or Mr. Gifford, Strand; Mr. Jacob Bell, Oxford-street; or almost any operative chemist.*

Glasgow Argus.—*We have received another paper on Clairvoyance from this source similarly unauthenticated. Marvels should never come without good characters in their pocket, whether from Scotland or America. Why does not the worthy editor give* names, *or be silent?*

Dr. Clay on Uterine Hæmorrhage, and Dr. Williams on the Practice of Medicine next week.

M. L. P.—A Subscriber, Manchester—Mr. Andrews—Codex—A Foreign Observer, &c., *declined, with thanks.*

Other communications are under consideration.

Mr. Greatwood—*Received.*

A mal-arrangement not perceived till the last moment, has compelled us to delay the conclusion of our report of Professor Brande's Lecture to next week.

THE MEDICAL TIMES.

SATURDAY, APRIL 1, 1843.

Præ-scribendi recte, sapere est et principium et fons.

THE evils of a bad and heterogeneous medical education cannot be exaggerated. They at once injure society in its highest interests, and make up a great part of the strifes and unhappiness existing among medical men. Society, if it have any interest at all worth looking after, has the highest of reasons for securing for itself a body of medical attendants invested with the greatest amount of competency and skill attainable by the best legislation.

If dearness impaired medical education it would be its place to remove the peccant cause, even by entailing expense on itself —and if private influences, or bad subordinate management, tended to a similar result, the necessity of interference would certainly not be less urgent. For years past, events have been extremely favorable to the creation of of a body of practitioners with qualifications of a very high character. The comparative affluence so generally reached, during or subsequent to the late Continental wars, by a great portion of the trading community, gave them the means of advancing their children to that elevation with which the previously unobtrusive habits of the class—as well as the respectability, at that time, of our practising brethren—tended to invest our profession. Year after year, as a consequence, the accession of new candidates for medical practice increased. They augmented, not in the proportion in which their services might be wanted, but in a mere ratio to the pecuniary means and aspirations of parents: and as no attempt was made by any party to regulate or check this extensive immigration, the evil would have gone on for ever, if—containing its own remedy—it had not, within the last year or two, worked its own cure, in the frightful superabundance it produced of candidates over labour. State intervention, at an early period, would have had two effects. It would have indirectly produced some better proportion between the demand for professional assistance and its supply—and would thus have saved hundreds from embarking in a profession which has proved to them a ruin, from which their habits and education unfit them to retreat; and it would have established a body of practitioners with an education of a far higher order than that boasted—it must be admitted—by many of our brethren; and who, with the prestige of high mental acquirements, would be saved from the anxieties of a fierce and degrading competition, and enjoy those easy circumstances which are necessary to the respectability and high standing of any profession.

All this might easily have been effected, by the simple plan of elevating the standard of requirements with the increase of candidates. But, unfortunately, this, the true regulator of our numbers, has not been used: and the grand questions, what shall be the sum of medical practitioners, and what shall be the measure of their qualifications, have been decided on, not as if they affected the happiness, the lives, the dearest interests of the whole community, but as if they were mere private matters—things to be privately arranged, without reference to anything but the state of accounts of the numerous functionaries who are authorised to ordain medical men.

To speculate as to the effect of all this on *life*, is not within our duty, more than within our pleasure—but we may affirm, without hesitation, that the uncertainty of each other's mutual standings, as scientific men educated in ways which offer such varied and wretched guarantees for competency, has been one great curse of our profession. It has engendered more distrust, dislike, and squabbling, among us, than any other cause we are acquainted with.

On the remedy that should be applied our sentiments are well expressed by Sir James Clark. He says:—

> When the standard of medical education has been raised to what it ought to be, the next point for decision will be the formation of a body to whom is to be delegated the power of carrying out the principles of education laid down by the government. That power should, in my humble opinion, be intrusted only to an independent body unconnected with the educating institutions on the one hand, and the medical corporations on the other; a body responsible to the government for its acts, having no collateral interests to divert its attention from carrying out in the fullest manner the principles embodied in the legislative enactment. But I have stated my views on this subject in my former letter, and further reflection has only tended to confirm my opinion,—that this important trust should be vested in a body in each division of the kingdom, appointed by Government, for the exclusive purpose of regulating the course of education. preliminary and professional, and of testing candidates for licences to practise.
>
> Unless the regulation of medical education is intrusted to such a body, it will be in vain to expect well-educated medical men. The subject of education must be taken up as a whole, and directed upon a well-devised system otherwise it can never be successful. It has been because the regulations respecting the education of medical men have been intrusted chiefly to the Medical Corporations that the preliminary education has been so totally neglected. Such bodies are not qualified to test candidates on their scientific acquirements. It is not their province, and in no other country, I believe, is such a duty intrusted to them. If the Colleges of Physicians and Surgeons are to have any share in examining candidates, it should be restricted entirely to testing their practical knowledge. The selection of a proper body for this purpose, for regulating the education and testing the qualifications of medical men, appears to me, in point of importance, in the accomplishment of a sound reform of the medical profession, second only to the establishment of a good preliminary and medical education to be required of every member of the profession as a condition of his receiving a licence to practise.

EXCISE PROSECUTION OF DRUGGISTS.

WE learn with much regret and surprise, that the delay produced by Sir James Graham's interference, has not terminated as satisfactorily as we expected. The Commissioners have suddenly issued notices to, we believe, all the Druggists who were charged before them with an infraction of the Excise Laws, requiring payment of the sum of ten pounds, when their case will be taken into further consideration. To our minds, the procedure is not just, nor the mode of carrying it out manly. Are the ten pounds to be final? If so, why are the sufferers harassed with *threats* of further proceedings? If not, why is the whole sum not at once fixed, and the anxieties of incertitude removed?

But why is so heavy a fineas even ten pounds to be levied on a large body of tradesmen for an offence common, and public as the light of heaven, which for years has been unnoticed by Commissioners, except to encourage it by their purchases? If such acquiescence in illegality —nay, such luring to it, is to be followed by such consequences, and in such a manner, our respect for the administrators of law cannot but be seriously impaired. If the Druggists are well advised, they will besiege the Board of Trade with parliamentary deputations—and if unsuccessful there, will bring before the House of Commons one of the most arbitrary and wanton tricks of power with which we have been for a long time acquainted. What does the *Royal* Pharmaceutical Society mean to do? Has it already become too aristocratic to take an interest in the sufferings of the Pharmaceutical *commonalty?*

ARSENIC.—When the carbonization or incineration of animal matter is *incomplete*, there are sometimes obtained, by the use of Marsh's apparatus, stains, which, without being arsenical, may have a similar appearance.

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

Formation of fat in animals.—In a late communication to the Academy of Sciences, M. Liebig controverts the opinion of MM. Dumas, Bonssingault, and Payen, who state that the matters entering into the composition of wax in the organism of plants, are converted in the body of the animal into stearic, oleic, or margaritic acid, passing into the blood, there to undergo oxygenation. M. Liebig, however, in examining the excrements of a cow which had been for some time fed on hay and potatoes, found the dung to contain almost the whole of the fatty matter entering into the composition of the aliments. The cow, which daily consumes 15 *kil.* of potatoes, and 7 *kil.* and a half of hay, receives in that quantity, 126 *grammes* of matter soluble in ether; this makes, in the six days, 756 *grammes*. The excrements in the six days furnished 747 *grammes*. 56. Now, according to the experiments of M. Boussingault, a cow fed on potatoes and hay, in the above-mentioned proportion, furnished in six days 64, 92 *litres* of milk, which contains 3116 *gr.* of butter, (according to the analysis of M. Boussingault). It is then absolutely impossible that the 3116 *gr.* of butter in the milk of the cow, could arise from the 756 *grammes* of fatty matter contained in the food, since the excrements of the cow yield a quantity of matter soluble in ether, equal to that which has been consumed.

M. Magendie briefly stated, the nature of some researches which he had undertaken on this subject, and which bore closely in their results upon those of M. Liebig.

M. Payen thought that the following facts might furnish some explanation of the difference existing between the observations of M. Liebig, and those of himself and colleagues. In the researches M. Liebig had instituted upon maize, he had, in the first instance, found that this grain contained but one per cent. of fatty matter. Subsequent analysis, however, gave him four per cent. Now, it is evident, that these figures are inadmissible, since the cotyledon of the plant contains sixty-six per cent. of fatty matter. M. Payen also considered the exact determination of the quantity of fatty matter contained in vegetables, to be a much more difficult operation than is generally thought. We should have but a false idea of this quantity, unless the vegetables were ground previous to analysing them; for he had found that vegetable substances, from which no more fatty matter could be obtained by the ordinary means, had, after being subjected to the most perfect trituration, yielded a remarkable quantity. Now, the action of the digestive tube is of this character: it dissolves and divides in the most perfect manner, the substances introduced into it, and thus, of necessity, renders the fatty matter more evident in the excrements, than even it was in the original food. We are not, however, as a consequence, hastily to conclude that the quantity of fatty matter has really augmented.

Menstruation.—Does the moon exercise any influence on Menstruation?—After a lengthened number of observations made on this subject, M. Parchappe comes to the conclusion, that the moon exercises no influence over this function; and he considers that the opinion which ascribes, in a more or less remote manner, the periodic return of menstruation to the revolution of our satellite, is not confirmed by experience.

Researches on the evolution of the hernial sac, and the complications to which it may give rise. By M. Demeaux.—One of the most important phenomena in the evolution of the hernial sac, is the mode of formation of its neck. The following is the explanation which M. Demeaux gives of this subject:—Whilst, he states, the bottom of the sac is smooth, the neck, from the commencement of the affection, presents a puckered circumference, somewhat resembling a purse. At a second stage, these peritoneal folds contract adhesions among themselves by the prolonged contact of its serous surfaces. At the same time, the sub-jacent cellular tissue undergoes remarkable modifications. Gradually deprived of its entire adipose tissue, it becomes changed into a new layer containing a large quantity of blood-vessels, and lying intimately adherent to the peritoneum. Lastly, in the third stage, or that of *strangulation*, M. Demeaux has seen this layer, originally cellulo-vascular, present the hardness and resistance of fibrous tissue. The dilatation of the neck then becomes impossible; it either resists the pressure of the intestine, or if the gut should succeed in passing, it strangulates it. The formation of the neck is, according to M. Demeaux, a product of the efforts of nature; the same cause which first gives rise to it, tends progressively to augment its thickness, and may definitively lead to the spontaneous obliteration of the mouth of the sac, if the intestine can be kept reduced for a sufficient time. M. Demeaux, however, seems to have overlooked another cause of this narrrowing of the sac, and which may be explained as follows:—during life the sac is always placed between two opposing forces, one of which (the action of the inspiratory muscles) tends to protrude the intestine without the abdomen; the other (the resistance of the soft parts of the groin, the action of the bandage, &c.) tends to produce its re-entrance within this cavity. The point where these two powers meet being on a level with the ring, it is evident that their action will be to compress, at this part, one against another the two layers of the serous membrane. Hence results, in the first place the adhesion of these two layers; then, as an inevitable consequence, the condensation of the sub-jacent cellular tissue into fibrous layers, by reason of the incessant pressure and friction kept up at this point. M. Demeaux then adverts to the changes in size which a hernia may undergo within a few hours subsequent to its strangulation, in consequence of the serous secretion furnished by the sac. The augmentation in size thus produced, is especially perceptible in hernias where the neck is very contracted, and where, in consequence, but a small portion of intestine was originally engaged in the sac. The presence of the liquid is here an indication not to delay the operation; for the taxis, acting on the intestine through this medium, is almost certain to prove inefficient. This series of phenomena is equally possible in congenital as in accidental hernia. The last considerations which M. Demeaux suggests, are in reference to the various arrangements or complications presented by the sac. The following are the more general forms:—1st, Two or more sacs placed one above the other; 2nd, two accidental inguinal hernias placed one by the side of the other, and in the same sheath; 3rd, a congenital hernia existing at the same time, and on the same side as an accidental hernia; 4th, two accidental hernial sacs, of which one is placed upon the wall of the other; 5th, two hernial sacs, of which one is obliterated.

Intestinal Suture.—M. Jobert has lately applied the suture in two cases of wounds of the intestine. In one, the operation was performed in consequence of a longitudinal wound, and complete adhesion took place in thirty-six hours afterwards, as proved at the autopsy. In the second patient, a complete transverse wound was united by the suture. The operation presented none of those difficulties which some writers have regarded as inherent to this proceeding. In thirteen hours, although the subject was attacked by frightful hæmorrhage, the re-union was perfect, and sufficiently firm to prevent effusion into the abdomen. These facts were shewn on a *post-mortem* examination.

On Prolapsus of the Urethral Mucous Membrane.—M. Tavignot states that youth, and a state of general debility, seem to be the predisposing causes of this affection. The passage of large or rough calculi by the urethra is its exciting cause, and may explain why this prolapsus is met with only in females. The freedom that the male sex enjoys in this respect is, according to M. Tavignot, owing to the fact, that the urethral mucous membrane is thicker, and less adherent in young females than in males. In this affection, one is sometimes apt to mistake the central opening of the tumour for the orifice of the uterus, and thus conclude, that there exists a prolapsus of this organ. This error may, however, be easily avoided; for by passing a catheter through the orifice, in a doubtful case, we shall readily perceive the escape of the urine. The treatment must depend on the nature of the cause. If it arise from inflammation, rest and antiphlogistics will suffice. In confirmed, or old standing cases, cauterization appears less efficacious than the ablation of the tumour. This may be practised by ligature or excision. The latter mode is generally to be preferred; it is done by drawing the little tumour forwards by means of a tenaculum, and then cutting it through with a pair of curved scissors, as close as possible to the urethral orifice.

Nature of Cancer.—M. Ricard admits three species of cancer—the encephaloid tumour, scirrhus, and the cancerous ulcer. Besides the differences in appearance, mode of evolution, &c., of these three varieties, M. Ricard lays great stress on the specific nature of the tissue attacked in each. Thus, encephaloid disease is developed in those organs where cellular tissue predominates; it is especially observed in infancy, when the activity of this tissue is greatest. The cellular and adipose tissues are rapidly developed and spread in every direction; so also is encephaloid disease quickly formed, and almost unbounded in its extent. Scirrhus arises in the glandular organs, and in those devoted to the function of assimilation. Some authors deny the existence of this disease before puberty. Its weight, its consistence, and the slowness of its progress, are its leading characteristics. Lastly, the cancerous ulcer is peculiar to the lamellar and tegumentary tissues; in fact, this form, which we must not confound with ulcerated cancer, is never observed elsewhere.

REVIEWS.

Observations on the Extraction of Teeth.—By I. Chitty Clendon, 1843.

This is a little work written in a good spirit, and not at all deficient in what we should have least expected in such a work—good powers of reasoning. The author has something to say, hence his book; he leaves off when he has said it, hence his *little* book. He has two principles to establish, first, that there should be no *key* patronised by dentists, an opinion in which we may tell him, for his surprise perhaps, that an Aston *Key* perfectly agrees, secondly, that there should be forceps more nicely adapted to the character and size of the

various teeth than those in common use. In the first opinion we are inclined to express a qualified agreement. The difficulty of fixing the space required between the claw and the fulcrum, the danger to the alveolus, on whose *edge* the fulcrum must be placed, the want of agreement frequently between the mechanical power used and the resisting bodies to which it is applied, the unvaried force, the varied obstructions, these are certainly strong objections to the key, which explain why its use has been *totally* foregone by some dentists of very great personal experience, and leave us without wonder that anxious attempts have been made to make that other great power of mechanics, the screw, subservient to dental exigencies.

But if the lever be dangerous, and the screw scarce possible of even clumsy application, the forceps, on the other hand, are certainly not without their disadvantages. The *irregular*, the *torturing*, though occasionally inefficient violence of the pulling, wrenching agency of the unsustained human hand when using an instrument which from the hand derives all its power, the impossibility of pulling infinite varieties of teeth with an instrument which, even with Mr. Clendon's improvements, is only decadally varied, the consequent imminent danger of having the double-sided pressure, nipping or crushing the tooth at a single point, these are evils only inferior to the *worst* evils produced by the key, and teach us, if we need such teaching, that, despite improvements in instruments and publication of new dental books, the extraction of teeth will never be as pleasant a matter as the use of them on white bait dinners at Greenwich or Blackwall, till at least mesmerism pay the promissory notes. which, though unendorsed by the profession's Copland, she has of late issued on the world in such Huntingtower abundance.

Though we would not commit ourselves to the adoption of all the views put forward by Mr. Clendon, we must do him the justice to own that his reasons are powerful, are well put, with force, but without exaggeration, and deserve the attention of all dentists, to many of the less accomplished of whom, the book will be of very essential service.

We cannot dismiss this book without noticing one fact. While the daily and weekly political journals reveal so many spine, ear, and other doctors, and nearly all dentists, degrading themselves and their profession as publicity hunting quacks, Mr. Clendon's name has never, as far as our scrutiny has extended, appeared in their dishonoured company. The present unpretending work is similarly characterised by a complete absence of anything approaching an empirical spirit. In thus giving him, therefore, our meed of praise, we are offering at once a model and a warning to less scrupulous gentlemen nearer the penetralia of the professional temple.

Two Lectures on the Defective Arrangements in Large Towns. By H. Sandwith, M.D.

These were read before the Hull Literary and Philosophical Society, and are dedicated, very properly, to that true-hearted nobleman, Lord Ashley, whose "energetic Protestant and *Evangelical* principles" are just as improperly referred to. The lectures, however, are written in a good spirit—shew as much good sense as benevolence, and if their utility is likely to be limited to the interest produced in Hull, by their immediate delivery, it is only because the exertions of the press—the work of Symons on Arts and Artizans—the various recent reports on the Sanatory Condition of the People—the report of the Health of Towns Parliamentary Committee, &c., have left little to desire in the way of further knowledge either as to the character or extent of British sanatory defects. What are wanted, are legislators who can discover and apply the necessary remedy.

Suggestions for putting an end to all Private Trusts, and establishing a General Court of Trusts, &c. By Ed. Cooke, Esq., of the Middle Temple.

This, as being a publication out of our department, we can do little more than acknowledge as received. Those who have suffered either because they have dependant on dishonest trustees, or have been associated in a trust with a dishonest colleague, or have suffered from a mistaken, but well-meaning, use of their vested power over another's property, will appreciate the importance of Mr. Cooke's suggestions, and will hesitate to believe, that there are any inconveniences under the new plan which would counterbalance the dreadful evils every day arising out of the present system. Mr. Cooke has our thanks for the lucid manner in which he has laid his case before the court of the public.

Concise Historical Sketch of the Progress of Pharmacy, in Great Britain, by Jacob Bell.

The Pharmaceutical Society is a formidable body, at least for the present. Medical men, who recollect how largely druggists and chemists interfered with their practice, when mere druggists and chemists, have not their fears one whit decreased, now that they find their old enemies suddenly elevated into pharmaceutists. Hence, probably, the attention which we have given to their movements, and the earnest demands we have been perpetually reiterating on them to shew themselves to us in their real character—to tell us what they really mean to do—and what we are to prepare ourselves for. Resembling, in this particular, the mice in the fable, when leagued against their feline foe, we are less lucky than they, in this, that, though we have the cat *Belled*, we know no more of its movements than if the bell were without a clapper. The worthy editor of the *Pharmaceutical Journal* has been, for more than a twelvemonth, hanging heavily enough round the neck of the Society: during that time he has regularly made his appearance once a month,—he is now again before the public, in a distinct work, formed, one would think, to let us know the precise things it is so much our interest to be forewarned of—but, for all that we hear from him, the cat might as well have never been belled, or the tintinabular appendage have been so much painters' putty, in a state of semi-animation. Of the book before us, two-thirds at least are given to the doings of physicians, surgeons, apothecaries. The pages which refer exclusively to the pharmaceutists, are those which record the exertions made against the Bills of Messrs. Warburton and Hawes, and the two or three which are given to the establishment and incorporation of the present Society.

The extracts we shall make will contain nearly all that we are favoured with on both these subjects. After touching on the apparent union of medical men, and the disunion of druggists, when Mr. Hawes introduced his Bill, Mr. Jacob Bell remarks :—

ASSOCIATION OF THE DRUGGISTS.

Pharmacy stood in a precarious position. Its real representatives—those on whom had devolved the chief responsibility of preparing and compounding medicines, were calumniated on every hand, and threatened with extraneous control, and a variety of restrictions. Even their right to dispense prescriptions was called in question, and they held their other privileges on an uncertain tenure. Yet they possessed no means of defence or representation, and although they were all sensible of the disadvantages of their anomalous position, none felt called upon to act for the general welfare.

In this state of affairs, the bill of Mr, Hawes came before Parliament, and the druggists suddenly roused themselves from their state of apathy, and arranged a plan of defence. The effect of this vigorous movement has already been described ; but when they had warded off the immediate cause of alarm, the druggists did not fan the flame of opposition, by keeping up an acrimonious controversy and raising a political faction. They endeavoured to trace the evil to its source, and having discovered that their weakness proceeded chiefly from the want of regular education, as well as the absence of unity among themselves, they turned their attention to the intellectual improvement and organization of the members of their body.

In proportion as these measures advanced, the opposition subsided ; a more harmonious feeling sprung up, not only among the druggists themselves, but between the druggists and the medical profession. We have now almost completed our arrangements for the education of our members, the examinations have commenced, a form of representative government is in operation, and our right to regulate the concerns of our own body is undisputed.

This change of circumstances naturally leads us to conclude, that the professional and scientific improvement of the Pharmaceutical chemist is not incompatible with the interest or friendly relation of the medical practitioner ; in fact, we have reason to hope that a continuance of the line of conduct which has hitherto been attended with success, will promote an increase of harmony among all parties, and thus prevent a recurrence of those mercenary and political controversies which disgraced the profession during the last century.

THE PHARMACEUTICAL CHARTER.

When the council of the *Pharmaceutical Society* had brought their arrangements to a state approaching completion, and felt prepared to prove, by what had been already done, that much benefit might be expected from the plan which the Society had laid down, they drew up a petition to Her Majesty, which was presented on the 5th of November, 1842, praying for a Royal Charter of Incorporation. Sir James Graham undertook to give the subject his mature attention, and intimated that he should consult some of the leading members of the profession, and take other means for forming his opinion as to the *public* utility of the *Pharmaceutical Society*, before he could give a definite answer.

On the 1st of December, the Secretary of the Society received an official communication from the Home Office, requiring his attendance, and was informed that the petition having been favourably received, the draught of the proposed Charter might be prepared in due form for the consideration of the Secretary of State. No time was lost in taking this step, and the Charter was approved by Sir James Graham, and also by the Attorney and Solicitor Generals, with a trifling and unimportant alteration. It appeared, however, that a "*caveat*" had been lodged by some party who suspected that the Society would apply for a Charter, and who was desirous of opposing it. But the twelve months during which period such caveat remains valid, had just expired, and as it had not been renewed, it fell to the ground ; and, on the 18th of February, 1843, the *Pharmaceutical Society of Great Britain* became a *corporate body*.

This event is important—being the first public recognition of the chemists and druggists as the representatives of Pharmacy. It cannot henceforth be said that the chemists and druggists have no political existence ; and, consequently, in the event of any legislative enactments being proposed, in which their interests are concerned, they may claim, not only to be heard, but to be consulted. By virtue of their Charter, they possess the power of regulating the education and admission of members, and thus providing the public with qualified practitioners in Pharmacy, while they establish an ostensible distinction between the

members of their body and unqualified persons. In case of any grievance affecting the individual members in any districts, or in any part of the country, and rendering an appeal to the Legislature desirable, there is an effective and official channel through which such an appeal can be made; and it may be supposed that the Council of an incorporated Society, representing so large a body as the chemists and druggists of the United Kingdom, would possess the advantage of an amount of influence which might, on a great variety of occasions, be beneficially exerted. We have seen, by the specimens already quoted, what would, in all probability, be the nature of a medical bill brought into Parliament by parties who have no community of interests or circumstances with chemists and druggists, and who have, on former occasions, endeavoured to introduce measures of a stringent and oppressive character. We have seen that about twelve months ago, measures were taken to restrain the progress of that body, and to impede the acquirement of that political influence which a charter would afford. And we need no stronger proof of the propriety and policy of the course which the chemists and druggists have lately adopted than the fact, that although it must have been clear to every one that, in the natural course of events, application would be made for a Royal Charter, and although any individual might, at a trifling expense, have lodged a fresh caveat, and thus, to a certain extent, thrown an obstacle in the way of its being granted, yet the proceedings of the *Pharmaceutical Society* having been confined to the improvement and regulation of the chemists and druggists, and divested of any political or party spirit, there was not in the whole medical profession, one man, within the last twelve months, whose conscience would allow him to oppose a measure the tendency of which was so obviously beneficial to the public, and creditable to the profession.

After expressing our strong complaint at the want of ingenuousness, in reference to the debateable questions between pharmacy and medicine, which marks this historical sketch in common with almost everything which has issued from the same source, it would not be candid to omit acknowledging, that the author displays in it, sometimes, acuteness—generally, powers of judicious discrimination—always, moderation,—and that if we may look through it in vain for any of the graces, the beauties, or higher excellencies of literature, it yet offers, especially in its earlier pages, a pleasing, and if plain, very useful, record of the phases exhibited by pharmaceutical medicine in her *progress* (can we call it progress?) to her present position in England.

Views upon the Statics of the Human Chest, Animal Heat, and Determinations of Blood to the Head, by J. Jeffreys, Esq., F.R.S., &c.—Longmans, 1843.

There is a healthy tone pervading this work that we like. The author is a man of observation and reflection, and although we cannot acquiesce in all his views and conclusions, yet the freshness and originality of his speculations cannot but call forth our approbation—and if there should be a little tendency to over-theorising, we become almost reconciled to it, from the ingenuity and mental power with which it is accompanied. The book is divided into three parts. The first part contains views of what the author quaintly enough calls *Statics* of the Human Chest: the second exhibits his views upon Animal Heat: and the third part is devoted to the subject of Dissipation of Animal Heat, and its influence in producing local determination of blood, especially to the head. In the appendix to the work some interesting points are also mooted, connected with the subject of respiration, and some of Leibig's views controverted with much ingenuity. We shall endeavour to place before the reader some of the more important conclusions of our author.

The term, *Statics*, found in the title-page of the work, in reference to the chest, is employed to denote, not only the *state* or *condition* of that part, but to indicate also the *balance of pressure* to which it is subjected It is a discourse on the pneumatic conditions of respiration; and in following out his subject, respiration is viewed under a fourfold aspect. In reference,

1st. To the *residual* air, or that remaining in the lungs after the most forced expiration.—2nd. The *supplementary* air, or that which can be expelled after an ordinary breathing.—3rd. The *ordinary breathing*, distinguished as the *fresh breath* (inspiration), and the *stale* breath (expiration.)—And, 4th. The *complementary* air, or that which enters with yawning and sighing. The first and second of these subdivisions refer to the *usual resident* air of the lungs; and the third and fourth, to the air that can be introduced in addition to the resident portion. We do not object to this arrangement, or to any other which leads us to a minute observation of the phenomona of respiration; although we are doubtful if it is practically superior to the ordinary sub-divisions of the process.

Our author entertains some novel—but, we fear, unfounded—notions regarding that portion of the inhaled air that directly conduces to the oxydation and decarbonization of the blood. He endeavours to shew that the air introduced during the ordinary process of breathing, and in the complementary, or fourth kind, is not only not directly concerned in the oxydation of the blood, but he contends that such air—that is, pure air—if brought in contact with the cells of the lungs, would prove injurious or fatal to life.

We may affirm, that the air of respiration does not, and cannot, even enter the air cells, nor even the smaller air tubes. It has no *direct* concern in the oxydation of the blood, nor does it receive its carbonic acid and vapour directly from the blood. Furthermore, its constant presence in the air cells would be injurious to health, and probably, soon fatal to life. The air of the breath has, in fact, no business with the blood, nor any footing in the cells of the lungs.

Our own experiments upon animals lead to conclusions directly at variance with this opinion of our author. We have repeatedly found, in experimenting upon the lungs of inferior animals, and in particular upon those of cats,—that, after those animals had ceased to breathe, by introducing fresh air into the lungs we could not only re-excite the action of the heart, but, what is more to our point, immediately superinduce a deep vermillion hue over the whole extent of the lungs. We cannot, therefore, agree with our author in his paradoxical position that pure air in the lungs is both unnatural and injurious. We can conceive that an over-distention of the cells with pure air might prove injurious to the structure of the lungs, but in no other manner can the entrance of pure air be deemed pernicious or hurtful. We think this fundamental position of our author therefore erroneous, and all his speculations and deductions founded upon this principle, however ingenious, both improbable and inconsistent with experience. This remark applies particularly to our author's views of the resident air of the lungs being a *protective* against malaria. Upon our author's own principles the very reverse is the more probable conclusion, for the air loaded with malaria in its turn becoming the resident air of the lungs, the malaria would have time to tell with more effect upon our author's principles, than if the resident quantity were more frequently evacuated, as maintained by physiologists generally.

Our time will not allow us at present to enter upon the remaining parts of the work. The questions discussed by our author are highly important, and embrace some of the abstract points in physiology. His opinions on animal heat are, however, not entirely new, though in a *novel* dress. They may be said to be a combination of those of Crawford, Lavoisier, and Liebig, and though the author is no servile copier of others, and grasps his subject with a power that places him far above the mere book writers, he has by no means exhausted it. We think the style of the work could be improved; the language is sometimes not sufficiently clear, and sometimes there is even a want of connection and aptness in the illustrations adduced. The following extracts, chosen principally for their interest, may give our readers a favourable specimen of our author's style.

THE LUNGS THE MEDIUM OF ATMOSPHERIC POISONS.

When the epidermis is soaked by a watery perspiration, or by wet being applied outwardly, it has appeared permeable by poison, which such fluid may receive in solution and convey inwardly, and I have known fevers and dysenteric attacks traceable with some reason to such action. But when the epidermis is ordinarily dry, it is, I conceive, very questionable, if these poisons often produce their action through it, either by absorption or by effecting the nervous system.

Considering the lungs as the usual channel through which atmospheric poisons exercise their influence, we at once perceive the high importance, in such atmospheres, of the large body of resident air. Each breath, on entering, suffers repeated dilution before any of it can reach the cells of the lungs, and must have its morbific virulence lowered in proportion. It cannot be unreasonable to consider that the susceptibility of a person to its influence will, in no small measure, depend upon his stock of resident air being large, in proportion to the bulk of each breath. Under this impression, I have, in my own case, been always careful in India, when exposed unusually to the influence of malaria, especially when travelling at night through a jungly country in the rainy season, to endeavour to keep the chest pretty full of air, and to draw upon that stock shortened inspirations; their small quantity being made up by frequency, and all deep inspirations being avoided. A sequence of this precaution, so invariable as to wear the aspect of a consequence of it, has been an immunity from all disease occasioned *by malaria* throughout a service in the East of many years' duration, and, at times, of more than common responsibility and labour; while persons of superior health and vigour were frequently attacked. In the more trying case even of jungle malaria, it is not improbable that the *resident*-air would often temper down poison in the respired air, by a frequent dilution before admitting it to the finer membrane of the lungs, and that it does so in many cases, but that an accidental yawn, or sigh, in the heart of a jungle (an action otherwise congenial with the place), may seal the traveller's fate, by an indraught of poison more than a match for the custodiary power of his resident air. The subject is worthy the attention of Indian travellers.

HEAT OF THE BODY.

The summary of the present observations under the present head is as follows:—

1. That water is unquestionably formed in the animal system as well as carbonic acid; therefore, that hydrogen as well as carbon is to be viewed a source of animal heat, and that we have no reason for concluding that there are any other sources.

2. That since by far the greater part of the food is thrown off from the lungs, we must look closely to the quantity of diet as the source *in general* of different quantities of heat required in different countries; and that we find, in the case of the inhabitants of intensely cold regions, both the quantity and quality of the diet to bear a close relation to the very large quantity of heat required to maintain the animal temperature in those regions;

while, on the other hand, the fruits and acidulous diet, for which there is an inclination in the tropics, may with good reason be considered to yield less heat in passing into carbonic acid and water, since a large portion of the oxygen requisite is already solidified in such vegetable principles, and, being in union, is less likely to generate heat.

3. But while a large quantity of highly carbonaceous food does appear necessary for yielding a great quantity of animal heat, as in the arctic regions—while, indeed, we are assured that nature cannot draw more than a certain quantity of heat from a given amount of fuel, we have above seen overwhelming evidence of the fact, that the development of heat by no means keeps pace with the amount of dietetic fuel. It is anything but true that the animal heat bears a constant proportion to the carbon and hydrogen of the food. It is a fact that, under the control of the vital power, flesh will yield more heat than rice; though, measured by the rule of combustion, the latter is far stronger fuel. It is a fact likewise that flesh, grain, and all kinds of food, though they cannot be made to yield more than a certain quantity of heat, may be and are often resolved into carbonic acid and water, in such a manner as to yield much less. We must guard ourselves against ultra-chemical views, and bear in mind the near resemblance of vital to galvanic influence. Little as this latter agent is as yet under our control, we have already attained the power of making it, *with the same amount of chemical action*, develope a great deal, or very little heat, according to the nature of our battery. This is a very important consideration. Hence I cannot fall in with those who would trifle away Sir B. Brodie's experiments. Though a warm advocate for Crawford's theory as modified by Lavoisier, I do not believe it complete without a further modification, pointed out by such experiments, and indispensable to make the theory agree with the climatorial facts. Thus guarded, our theory of animal heat will be found to answer to every circumstance of animal life. Otherwise, every step we take in Asia, not to mention Europe, presents to us instances of its failure as glaring as the tropical sun which produces them when it narrows every outlet of animal heat.

LIEBIG'S VIEWS ON ALKOHOL IN THE SYSTEM.

In page 239 Liebig observes :—" There can be no doubt that the elements of alkohol combine with oxygen in the body : that its carbon and hydrogen are given off as carbonic acid and water." And again :—" It is consequently obvious, that by the use of alkohol a limit must rapidly be put to the change of matter in certain parts of the body. The oxygen of the arterial blood, which, in the absence of alkohol, would have combined with the matter of the tissues, or with that formed by the metamorphosis of these tissues, now combines with the elements of alkohol." In these, and other passages of a similar kind, we find him, in the first place, to leave unnoticed the great and obvious effect of alkohol on the nervous system ; secondly, to dwell solely on the supposed use of its elements as animal fuel ; and thirdly, to rest the proof on the assumption, that alkohol undergoes an entire decomposition in the system. With respect to the first, it would be trifling with the observation of any reader to enter into proof, that the main action of alkohol is not that of the mere carbon and hydrogen it contains in common with a proportional quantity of oil, but is due to its proximate and compound properties as a powerful narcotic stimulant, acting directly on the nervous system, compared with which action any ultimate use of its decompounded elements is as nothing. Secondly, with respect to the author's estimate of the power and use of alkohol solely by the animal fuel, the carbon and hydrogen, which it contains,—it must be to every reader of the author's work beyond measure surprising, that in this, and in other instances, various powerful agents are measured chiefly by the value of their elements as materials for yielding carbon and water, or intermediately forming some animal secretion, as bile. We have a remarkable instance of this in page 181, where, after proving, or rather stating, *theine*, the essential basis of tea, and *caffeine*, the basis of coffee, to be one and the same principle, he shews that by the addition of oxygen and of the elements of water they may pass into bile ; or rather, that the arithmetical sum of the elements of either, and of an artibrary quantity of oxygen and of water, may be made to correspond with the sum of the elements in bile. Since nearly all varieties of animal and vegetable principles derive their materials from four elements only, if we are permitted to shift two out of the four quantities *ad libitum*, it does not appear to me very surprising that we should be able to make two compounds agree, each of which contains the whole four elements. I cannot, therefore, find reason for attaching the smallest weight to the fact (without questioning its truth) that the sum of the elements of theine, and of an assumed quantity of oxygen and of water, equals the sum of the elements of bile. This, however, is not the remarkable point at issue. It is the importance Liebig attaches to the fact, that *theine* and *caffeine* may form bile in the system. Not satisfied, though he refers to it, with the peculiar influence of these grateful stimulants, (or, as we are told, this stimulant,) on the stomach and nervous system, he dwells upon the probability of their chief use as affording materials for bile; and this, although, as he admits, their quantity would only be a small fraction of a grain, while the daily production of bile may exceed a pound. In fact, any one mouthful of meat a person eats supplies more of the elements of bile than all the *theine* in the tea he swallows in a week.

To return to the question of alkohol. Can we bring ourselves to view the carbon and hydrogen in half a pint of brandy as of any separate effect at all to be compared with the highly stimulating power of that quantity of spirit? Half a pound of bread would be as effective as animal fuel; nay, far more so, inasmuch as it would be easily decomposed, whereas alkohol is in a singular degree indigestible. This leads us to remark upon the third point,—the evidence on which he grounds his view of the use of alkohol.

We find him to contend for its complete digestion and resolution into carbonic acid and water, upon the assumption that it does not pass off undecomposed by any of the outlets of the body. If we begin with the first process of digestion, that in the stomach, we are assured, by the careful inquiries of Dr. Beaumont and others in America, that alkohol is not at all resolved by the gastric fluid, but is absorbed unchanged into the blood. This is an important fact, rendering the subsequent resolution of it very questionable. Again, it is found excreted from the blood, and deposited with the exhalations from membranous surfaces, as in the ventricles of the brain. It has been there found in so large a proportion as to render the ventricular fluid inflammable, as in the case observed by Dr. Brown of Edinburgh. Beyond such facts as these, once established, I do not think it would be necessary to proceed. They abundantly disprove the opinion, that alkohol is readily digested, and transformed in the system ; and prove, that in the effort to get rid of it, nature even employs the ventricular membranes in the brain to exhale it. From this we might be satisfied, that although the peculiar sensibility of the kidneys and bladder disqualifies them for carrying off, or bearing, the stimulus of any but urinary irritants, of which there are many other instances, and although, therefore, we need not expect to find alkohol in the urine, we may be sure it will find vent by the skin, and the lungs. The shirt of a drunken soldier in the tropics, sweating profusely in a debauch on arrack, has a strong odour of the spirit, of which his skin is relieving him ; and in proportion to the profuseness of his perspiration can he endure the ingurgitation of liquor, which is thus obviously carried off unchanged. So in our damper climate, a large portion of the spirit swallowed by the profligate inebriate fumes forth unchanged from the lungs, and in such quantity as to render every breath offensive.

Yet the author, in page 239, takes it for granted, upon supposed observation, that alkohol does not pass off by the lungs or skin ! This is the more curious, since we find in the same page the following statement respecting the escaping power of alkohol, in which he goes even further than most will feel able to follow him:—"Owing to its volatility, and the ease with which its vapour permeates animal membranes and tissues, alkohol can spread throughout the body in all directions." Surely, by the time we admit all this we must view the spirit as passing not by excretion only, but even *sua sponte*, from membranes it so easily permeates—the pulmonary and cutaneous ; thus making its escape from the body as from a heated sponge, by volatilization. In this passage the author invites us, though not intentionally, yet of necessity, to conceive a discharge of alkohol unaltered to take place more rapidly than I should even desire, in order to disprove his view.

ROYAL MEDICO-BOTANICAL SOCIETY.

(*22d March.*)

H. Gibbs, Esq., in the Chair.

A communication from Mr. Ley was read, detailing the results of his experience with the cannabis Indica, the Indian hemp, in the treatment of certain convulsive and inflammatory diseases. One of the most important and interesting of the cases detailed by him, was that of a lady, who had been confined to the hydrostatic bed for five years from disease of the spine and hip, and in whom, whenever she was moved from the bed for the renewal of the India-rubber sheet covering it, there was produced a disturbance little felt at the time, but inducing at night a succession of violent spasms of the muscles of the spine, drawing the body back into the form of an arch, and as suddenly relaxing. These spasms would follow each other rapidly through the night, producing faintness, sickness, and insensibility, all through the next day. This alternate state of nocturnal tetanus, and daily fainting, &c. continued generally after each moving for a fortnight or three weeks, obstinately resisting every medicine that could be applied for its relief. When Mr. Ley obtained possession of some of the resinous extract of hemp, he had pills of one grain weight made, of which he gave the patient six, directing her to take one on the occurrence of the first symptom of spasm, and to repeat the dose every half-hour until the spasm was relieved, or some other reason offered for their discontinuance. Five pills were taken, when she felt overpowered ; the muscles relaxed, and she fell into a profoundly tranquil sleep, likened by her afterwards to a trance, because she was for a long time after she had apparently fallen asleep, conscious of passing events, but unable to make known her perceptions. The spasmodic attacks returned for several successive nights, but were not so violent, nor of such duration, as previously. The opinion of this lady, who, by long illness is familiarized with medicine, is, that the extract of hemp affects the muscles principally, relieves ordinary pains less surely than opium, disturbs the stomach little, if at all, but produces an unpleasant sensation in the head,—not excitement, but objects appear before the eyes, which do not really exist ;—thus she may see a book so plainly on her bed as to reach out her hand to take it, or she may seem to be holding a newspaper.

Mr. Ley has further found the resinous extract of hemp of service in the treatment of acute rheumatism, cholera, chorea, effusion into the knee-joint, house-maids' knee, enlarged ganglia, &c.

Dr. Houlton, in the absence of the Professor of Botany, then made some observations on several recent specimens of medicinal plants that were on the table. Dr. H. dwelt on the importance of studying the leaves, stems, and roots of plants, as well as the flowers ; and he considered this of more real importance to the medical practitioner than all the microscopic minutiæ that are now taught in lectures.

Speaking of the ruseus aeuleatus, or buteher's broom, he said it is a plant that was formerly in great repute as a diuretie; it is in the same natural family as the asparagus, a plant whose action on the urinary organs is well known. He considered this to be of equal efficacy with the eytisus seoparius, and to be more safe. The eytisus seoparius, or eommon broom, which enters into the deeoctum scoparii compositum, is in the same genus as the laburnum, a known poison. He had known a person to take, by non-professional adviee, a strong decoetion of broom tops, ad libitum, for dropsy. In this case the diurctic effect was not produced, but a state of depression, or eollapse followed, from which the patient never reeovered.

New Born Children.—In new born ehildren who have died jaundiced, Dr. Cless, of Stuttgard, has remarked some striking pathological alterations in the kidneys. On cutting into these the papillæ of the tubuli uriniferi are found to be filled with some reddish-yellow matter, and on squeezing them a quantity of yellow granules, as minute as vegetable pollen, may be foreed out. These granules are insoluble either in alcohol or in water at any temperature; but their chemical composition does not appear to have been yet fully inquired into.

Caution.—*The Income Tax.*—Oppressive as this impost is, a nefarious project has just been broached to render it more intolerable, or extort money under its mask, at the west end of the town. An attorney there, it seems, who aets as assessor, or colleetor, surmising that the medical praetitioners in his distriet have under-rated their revenues, has employed his son, or son-in-law, an obseure provincial apothecary, to address letters to the prineipal of them, offering the most magnificent sums—the amount of two or three years' reeeipts—for their practices; and then, eomparing the report of their receipt and their income, the knave threatens them with surcharge for the difference! From the indignant contempt with which the fellow has been defied, in one or two instances, it is presumed that he will not attempt to repeat the experiment; but, lest he should, our readers had better remain upon their guard.

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Sir David Dixon. Physician to the Royal Naval Hospital, Plymouth
Dr. Cookworthy, Physician to Plymouth Dispensary.
Dr. Watson, Physician to Middlesex Hospital, London.
J. G. Perry, Surgeon, Foundling Hospital, London.
Dr. Rae, Royal Hospital, Chatham.
J. R. Martin, Esq., (late of Calcutta,) Grosvenor-street, London.
Dr. Jackson, late Apothecary-General, Bengal.
Dr. Graves, Meath Hospital, Dublin.
Dr. Hannay, Professor of Physic, Glasgow, and Physician to the Royal Infirmary.
Dr. Yonge, Dr. Hingston, } South Devon Hospital.

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T. CALLAWAY.

Wellington Street, Feb. 24th, 1843.

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SAMUEL SOLLY.

St. Helen's Place, Dec. 24th, 1842.

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WILLIAM COULSON.

London, Feb. 23d, 1843.

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THOMAS BULL, M.D.

Finsbury Place, Feb. 24th, 1843.

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JOHN GAY,
Surgeon to Royal Free Hospital, &c. &c. &c.

Feb. 12th, 1843, *Pavement, Finsbury.*

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I remain, truly yours,
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2, *New Basinghall Street,*
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EDWARD COCK

St. Thomas-street, March 11, 1843.

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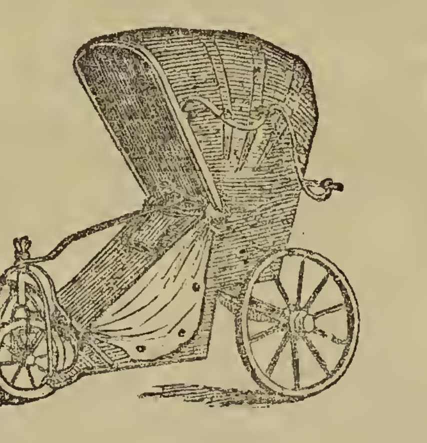

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 185. Vol. VIII. LONDON, SATURDAY, APRIL 8, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY,

Delivered by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S, L & E., &c. &c. at the Royal Institution.

(Continued from p. 7.)

You observe then that the great bulk of the atmosphere is made up of nitrogen and oxygen; there is about one part in 100 of aqueous vapour, and one part in 1000 carbonic acid; and, therefore, if you take the constituents of the air by bulk or by measure, you have, by far the greater portion, a *mixture* of nitrogen and oxygen; not a compound, but a mere mixture. The properties of these substances I may just hastily advert to: carbon must be taken up pretty much in detail, in consequence of the very important functions it possesses.

Nitrogen is a gaseous body, somewhat lighter than air; it is colorless, and has neither taste, smell, nor solubility. If I put a taper into a jar of the gas, it is immediately extinguished, and however much I agitate it with water, none of it is taken up. These are some of the properties by which nitrogen may be recognised in its free and pure state: it is a highly important element of certain organic bodies.

Another element is oxygen. Oxygen, like nitrogen, is a gaseous body: in its pure isolated state it is a little heavier than common air, and it possesses the power of supporting combustion with great splendour and eagerness.

To illustrate the composition and characters of atmospheric air, I have here pure nitrogen, and pure oxygen, which I shall mix in the relative proportions of four parts by measure of the former, to one of the latter. They produce, you observe, a mixture in which a candle burns precisely as in common air. If to such a mixture I add too much oxygen, the candle will burn brighter; and if too much nitrogen it will burn dimly; but if the proportions are nicely balanced, it will burn as in the common air. We must not, however, go away with the notion, that because we can thus produce something equivalent to atmospheric air by this mixture of nitrogen and oxygen, we have the essential elements of air; for without water it would be unfit for respiration and the growth of plants, and without carbonic acid, unfit equally for the vegetable world. Then there are also in the atmosphere minute quantities of some other substances besides aqueous vapour and carbonic acid. An accurate analysis of the air is a very important matter in relation to all that belongs to our present subject, and I must pause a little to show you, by a few further experiments, what its constitution actually is.

We have to determine, first, the relative proportion of the nitrogen to the oxygen. If I burn hydrogen in the air, it will combine with the oxygen and form water; by burning hydrogen in this way, I abstract nearly the whole of the oxygen—and this was one of the first accurate experiments by which the composition of the air was determined. In thus burning the jet of hydrogen, (that is, in a confined portion of atmospheric air,) I find that one-fifth of the air, namely, the oxygen, disappears, but that four-fifths remain, these being pure nitrogen.

From this experiment we may go to another, which is a very curious one, and gives results even more accurate. I have here a tube containing common air mixed with hydrogen gas; there is no action whatever between them; they have no mutual reaction; but if I introduce into this mixture of common air and hydrogen, some small balls made up of finely powdered platinum, I find that they immediately cause the hydrogen and oxygen of the air to combine, and they leave the nitrogen untouched. Here then I get a very perfect mode of abstracting the whole of the oxygen. These balls, by acting on the mixture of these gases, cause vapour to be deposited on the sides of the tube in which the experiment is made, water being produced. If I divide the diminution of the bulk by three, I get at the quantity of oxygen.

The accurate determination of the relative proportions of nitrogen and oxygen in the air, being, as I have said, a problem of much importance, has led to an infinity of other experimental researches upon the subject, among which, I shall only now advert to those recently published by Dumas and Staas. Their mode of experimenting was, in some respects, new: they suffered a given quantity of air, deprived of all moisture and carbonic acid, to pass slowly through a tube containing metallic copper at a high red heat: the copper became thus converted into oxide of copper, by absorbing the oxygen of the portion of air passed through the tube, while the nitrogen was collected in an exhausted flask, which admitted of being accurately weighed, while the relative weight of the oxygen was determined by the increase of weight sustained by the copper.

[Mr. Brande exhibited this experiment, and pointed out the requisite precautions to ensure accuracy.]

Another ingredient of the atmosphere is *water*; its proportion is extremely variable, but it is a very important constituent of the air. In the first place its value is manifest with regard to animals, for if they breathe perfectly dry air they soon begin to feel its extreme inconvenience. We know that if a quantity of dry air is thrown into a room the respiration becomes oppressed, because it produces a great call on the body for moisture, and therefore it is felt in the lungs and on the skin. With regard to vegetables, the effect of dry air on them is to cause them to droop; you see this particularly during the prevalence of a dry north easterly wind. There is the same call upon the leaves of vegetables for moisture, and the consequence is, they shrivel up: this is called a blight. In order to determine the *quantity* of moisture contained in the air we have recourse to the balance. If I take some pumice stone soaked in oil of vitrol, the pumice stone acts as a kind of sponge, and not being acted upon, as some other substances would, by the acid, enables it to be spread over a great surface. Oil of vitrol exposed to the air, soon begins to increase in weight, and in a few hours its increase is very considerable. In a few days I shall find, if I leave it in the balance, that it has taken up the moisture of the air to a considerable amount.

Again, if I take some cold spring water, and pour it into a metallic cup, water immediately makes its appearance on the outside of the vessel. —You must all have observed, that if, on a warm and damp summer's day, you pour some very cold water into a glass, there is an immediate deposition of dew or moisture upon the surface of the glass; and if in that case the air is very moist, a very slight difference of temperature between the vessel and the air, causes the air to deposit a portion of its moisture on the outside of the vessel. It is on this principle that Dalton determined, and with great accuracy, the quantity of watery vapour existing in the air at any given time of observation. Daniell's hygrometer is an instrument constructed for this purpose; it is, in fact, a modification of Dr. Wollaston's cryophorus, and is the only instrument by which we can accurately determine the actual quantity of water existing, at any given time, in a given bulk of air.

[This and other hygrometers were here exhibited and explained.]

Now water is a compound of hydrogen and oxygen, and as I have told you how important a feature water is in the constitution of organic bodies, we must look particularly at its composition as well as its properties, and accurately determine the quantity of hydrogen and oxygen it contains. This again has been the subject lately of a great number of accurate experiments, and there are various modes by which we learn the composition of water. If I put certain metallic substances into water, they will immediately begin to decompose it, and combining with its oxygen, evolve the hydrogen in the form of gas. If I pass water (steam) through a red hot tube containing clean iron wire, or turnings, it is decomposed, its oxygen is absorbed, and retained by the iron, and its quantity may be determined by the increase of weight which the iron sustains, whilst the hydrogen is evolved, and may be collected, and weighed or measured. There are many other modes of decomposing water.—[Those by potassium, and amalgams of potassium, were exhibited.]—The result of the whole evidence is, that water consists of 1 part, by weight of hydrogen, and 8 of oxygen, or, as nearly as possible, of

Oxygen	88.9
Hydrogen	11.1
	100.0

Having said thus much respecting the composition and decomposition of water, I must now explain a particular meaning which is sometimes attached to the term *water* in speaking of the elementary constituents of organic bodies, and where it is rather intended to refer to the fact, that they contain oxygen and hydrogen in the same relative proportions as in water, than to imply, that the water is ready formed in them; thus it is that I may call sugar a compound of charcoal and water; by which I mean, that charcoal plus a certain quantity of oxygen and hydrogen in the same relative proportions as in water, constitute sugar. Suppose I take six parts of charcoal from sugar, I find there remain nine parts of (the elements of) water; those nine parts contain eight of oxygen and one of hydrogen: and, therefore, it amounts to the same thing whether I tell you that sugar is a compound of charcoal and water, or that it is a compound of charcoal, hydrogen, and oxygen, the two latter elements being in the same proportions as exist in water.

Water is, in various ways, a compound of great importance in organic chemistry. You have seen that it is present in the form of vapour in the air. It is an important element in all that relates to respiration and vegetation: it is emitted, and perhaps occasionally absorbed by the lungs and by the skin, and it is manifest it can be absorbed by plants from the air—because, if we take a drooping plant from a very dry air and put it into a moist air it begins to revive, showing that the leaves have the power of absorbing moisture.

Water also forms a constituent part of organic bodies, being essential to the condition of life.

A piece of meat may be made perfectly dry, or we may think we can squeeze it perfectly dry; but by rubbing it in a dry towel, we find it still retains water in a very peculiar state: in fact,

what we call dry meat contains as much as seventy-five per cent. of water, and if we dry it in a high temperature it loses to that amount.—When we talk of eating a pound of beef, therefore, we only eat a quarter of a pound; all the rest is water; in its fluid state water is required to enable the organized bodies to transmit through their vascular structure those substances which are necessary to their sustenance; and thus we see, by the sap of plants, a number of substances are carried through the texture of the plant to nourish and build up that structure.

Water appears to be assimilated in some cases by plants, as such. Plants seem to be capable of taking up a certain quantity of water, and of combining it in their texture with other substances, especially carbon; and when we come to consider these other bodies I have adverted to, we shall discuss this matter more at length.

The next subject that comes before us in this brief outline of the components of the atmosphere is carbonic acid; and although present as a constituent of the atmosphere—and it is a very important constituent—and although a large quantity passes through the medium of the air into the vessels of plants, and is absorbed by them,—a very little is found at any one time in the atmosphere. There is every reason to suppose that the quantity of carbon we find in the form of coal and carbonate of lime, has originally been of organic origin; that all the present consumption of coal, the thousands of tons we are consuming every year, is the product of the destruction of the vegetable world of former days.

The limestone rocks—those great accumulations of carbonic acid and lime, appear to have derived their carbon from the organic creation; and here some very curious points arise as to the wonderful provision made, as it were, for the building up of organic and vital textures from the carbon of former days.

We are, in fact, carrying away enormous quantities of carbon from the bowels of the earth and burning it into carbonic acid; London alone thus consumes annually two million tons of coals, and sends into the atmosphere upwards of seven million tons of carbonic acid. But this carbonic acid, instead of being left in the atmosphere, is absorbed by the vegetable creation, its carbon is used to build up the woody fabric of the trees of the forest, and to form a part of all plants, while its oxygen, or the greater part of it, is again restored to the atmosphere, from which for a time it had been borrowed. Animals, or at least the graminivorous tribes,live upon these vegetables, and in their various functions,but especially in respiration, they convert the carbon again into carbonic acid, and send it back to the air again to be absorbed and decomposed by plants as before. Thus we see that while by animals a process is carried on, which is equivalent to combustion, that is, they convert carbon into carbonic acid, and hydrogen into water, vegetables are, on the other hand, performing the opposite process of reduction; and if we contemplate, even only superficially, these wonderful relationships and mutual dependencies of the three kingdoms of nature, of animals,vegetables, and the atmosphere, we cannot but be struck with the importance of their respective functions and of the wonderful manner in which they, as it were, provide for each other's existence.

I must now further ask your attention to the properties of carbon, and such of its combinations as belong to organic chemistry; these will be the leading subjects of our next lecture.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Friday, March 31, 1843:—

J. N. Walters, C. Irving, J. W. James, N J. Highmore, J. Harrison, J. H. Stallard, F. H. Green, H. M. Cannon, J. M. Hudson, J. Paley, T. Smith, G. Taylor, G. P. Dale, G. W. Timms, J. T. W. Bacot.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

In my last lecture, I attempted a short and general view of the symptoms of diseases of the respiratory organs, and, in giving an analysis of them, I referred to dyspnœa and cough; and I considered and explained the act of expectoration, and how it was performed. I explained that the air passes much more rapidly through the narrow tubes than it does through the larger ones, and that, consequently, there is a greater tendency to drive the accumulating matter into the narrow parts. The narrowness of the tubes, the increased velocity and force with which the air passes the narrow parts, and the comparative fixedness of the narrow parts of the tubes, the lower parts being more mobile, are the causes of the expectoration of the accumulated matter. We may find a good and simple illustration of this in the action of a pair of bellows. These are the chief mechanical causes—but you will understand that there is an essential element in the act of expectoration, and that is, a sufficient amount of inspiration to carry the air along to the matter to be expectorated, in order to effect its dislodgment. Now, for this reason, in various diseases of the lungs, there is no expectoration at all: in pulmonary apoplexy, for instance, a great deal of blood is effused into the cellular texture, and there is no spitting of blood, because in these cases the air is not introduced into the vesicular texture below the matter.

I may here mention, that where matter accumulates in the vesicular texture exclusively, there may be no cough; the matters present may not be sufficiently irritating to cause the act of coughing; but if it does take place there is an absence of expectoration, the cough is a dry one. This sort of thing is observed in some of the cases of deep-seated pneumonia, from the reason I have described. In addition to this, there is another element essential to the act of expectoration, and that is—sufficient power in the muscular apparatus of respiration to force air down to the very bottom of the lungs, and produce the full effect of forcible expiration,and consequently expectoration. Weakness, therefore, as well as obstruction in the tubes, may prevent expectoration; and we find that inability to expectorate is often the immediate cause of death, and that life is sometimes saved by the application of remedies to assist the act of expectoration. We usually, therefore, give remedies of a stimulant character, tending to give temporary power to the muscular apparatus of respiration. But there are others that seem to act specially on the organs of respiration, such as a preparation of ammonia. Sometimes, again, emetics are useful to produce expectoration, especially in the manner I have before alluded to, in which a violent cough is produced, and the act of vomiting is more prolonged or protracted. When the glottis is closed to its greatest degree, the passage of the air outwards is prevented; but if the vomiting is very violent, the glottis gives way, and the pressure is not only exercised on the abdominal muscles and the stomach, but upwards to the chest; and you find there is coughing and violent expectoration at the same time. Now, this act will often assist considerably in disengaging a great deal of phlegm from the larger tubes, but I doubt whether there is much power given towards relieving the vesicular texture by the mere act which expels the air from the larger tubes in various diseased conditions of these organs.

With respect to the matter expectorated, we shall have to consider morbid expectorations under the particular heads of each disease in which they occur, and of which they form characteristics. The natural secretion of the mucous membrane of the respiratory organs is what is called mucus; it is a slightly glutinous, colourless liquid, something like saliva, though perhaps a little more glutinous; it is viscid, and seems to be imperfectly coagulated albumen. In this liquid there are scales from the epithelium of the mucous membrane, and these constitute its chief microscopic character. It is important to bear in mind, that it is partly made up of viscid liquid and of solid matters. The base of it is mucus, which seems to be of a slightly glutinous character, containing scales of the epithelium, which obviously proceed from the membrane itself. The varieties of mucus presented to us in the matter expectorated, chiefly depend on the various proportions and conditions of the animal and saline matter in it: it is constituted, not wholly of fatty animal matter, but of liquid and saline matters containing muriate of soda, carbonate of soda, and in some cases certain acids; but the saline matter varies remarkably in its proportion. Now, the animal matter is either mucus in the healthy and natural state, (in some cases of disease it is merely mucus) or uncoagulated albumen, as in cases of inflammation; or it may be a mixture of coagulated albumen, or rather, mere albuminous matter in connection with the mucus, or alone, as in the case of purulent and tuberculous expectoration. Now, the distinctions to be observed, and which are are most useful in a practical point of view, with reference to the kinds of expectoration, are those which are represented by the terms, density, wateriness, transparency, and opacity. These are the four varieties of expectoration proper to be distinguished, and they have been formed into different divisions—the viscid expectoration, the opaque expectoration, the watery expectoration, and the dry and tough expectoration. Now, the viscid, tenacious, or glutinous expectoration is usually seen in inflammation of the mucous membrane of the air passages. It likewise has a most characteristic form, that of a remarkable degree of transparency, or a semi-transparency, with viscidity. This distinctive character is not only a sign of inflammation, but of intense inflammation; and it is seen in a high degree of bronchitis, and in pneumonia, in which case it is tinged with a colouring matter as well. Another peculiarity is, that the expectoration is saline—it tastes of salt, from an excess of saline matter in it. In this respect, as well as in regard to the transparency and viscidity, it may be contrasted with the opaque expectorations, which may be said to be albuminous, and to consist in having a quantity of opaque matter combined with the albumen. This is present in many forms: it occurs at the termination of acute inflammation. Sometimes the matter is thrown out in the form of pus; and at other times it is more compact, in the form of solid and opaque lymph, in shreds or fibres, and sometimes actually in the form of tubes, with bits of the bronchial tubes themselves; and in some instances the matter expectorated has the mould of a great number of bronchial tubes, looking like little branches of dry matter, or little concretions, with a great number of ramifications. They are merely bits dislodged from the ramifications of the bronchi, and this form of expectoration is what may be called, plastic expectoration—something like lymph, or that form of the overflow of secretion which sometimes occurs in mucous membranes. It is not the usual secretion of mucous matter. Sometimes, too, it is mixed with blood. Where the matter is purulent, there is another character besides the two chief ones—opacity, and the absence of saline taste—and that is, its diffusibility through water. Mucus is itself of a certain density—it travels along with water, but it is not diffused through it. Some of the opaque kinds of mucus render water turbid when added to it. There is this distinction between the two kinds of viscid mucus, that one remains on the water, and the other does not. Where the liquid is not viscid, there is seen an accumulation of air-bubbles, and sometimes you find clots, and sometimes not. In all cases, however, the opaque expectoration is of less serious import if the opaque matter is broken up into clots, and is not rigid.—It is one remarkable character with respect to opaque expectoration, that the absence of saline matter renders it less irritating, for saline matter is remarkably irritating. Some experiments have been made which seem to show, that the addition of saline matter may convert the expectoration into a sort of pus, and the pus itself into a sort of mucus. The watery expectoration is that which is present in fluxes, where the mucous membrane secretes a large quantity of liquid which appears to be a sort of diluted mucus. It may arise as a sort of flux from irritation, such as snuff in the

nose and irritating the nostrils, or it may arise from obstruction in the bronchi. The fourth variety of expectoration is the dry tough expectoration, where the matter expectorated is interspersed with black matter, from the various noxious matters in the atmosphere accumulating on the surface. The chief characteristic of this expectoration is its viscidity, and its being voided in tough pellets. It is connected with a congested state of the bronchial membrane.

Thus the matter expectorated is in itself, in some degree, an indication of the pathological condition of the air tubes, from which it comes, and if we could always see the expectoration, and tell the particular part of the membrane from which it comes, it would be still more certain ; but we find, that by the combination of this sign with the physical signs, we have the means, in many instances, of deciding the particular part of the chest, or of the lung, from which the expectoration proceeds, and thus of forming a diagnostic. The expectoration may be of the variety called viscid, or opaque. When it passes into the opaque form, there is a transition stage, in which there may be many varieties. It may be variously colored, and altered by the addition of blood, presenting the appearances of brown, dark red, and sometimes green.

I have very few words to say on the subject of the other general symptoms that may become illustrative of the condition of the diseases of the chest. Pain is, no doubt, an important symptom ; it is so subordinately, and it is the first announcement to the patient of the existence of disease. It is a bad symptom, from its being a measure of the importance of the disease, or an index of its presence. Many of the most serious diseases occur without pains, and the severest pains in the lungs are not always accompanied by disease. You know that the pathological element of pain is not essentially dependent on organic disease. It may arise from sensibility, or it may arise from changes of the sensitive apparatus, quite independent of change in other parts. There are, however, cases of pain produced by inflammation, in which it becomes a sign of the inflammation, as, for instance, in bronchitis, or pleurisy, accompanied by a short stitch in the side. Pneumonia, on the other hand, is accompanied by a more aching pain—a constriction, which is deeper seated. Sometimes pain may be detected by giving increased tension to the parts by pressure,—pressing both hands, stretched out, with considerable force, and desiring the patient to take deep breath. All these pains may be neuralgic, so that it is necessary to refer to the heat of the skin, and the state of the pulse, as physical signs, in order to determine what the pain is. Yet this shows that pain is a very good indication. The fixed and permanent pains are the more important. Spasmodic pains, or stitches, or a feeling of oppression coming and going, is very often observed to occur independently of disease in the chest.

There are other symptoms much more general and less spasmodic, as pointing out the condition of the chest. The most important of these is the pulse, a disturbance of which exhibits itself in chest diseases. The heart's action is especially liable to be modified by disease of the respiratory organs, for the state of the respiration mechanically affects the heart's contractions. The heart is contained within the chest, therefore, when the act of inspiration takes place, the heart is compressed together by the whole contents of the chest. Again, in the act of expiration, the pressure is removed from the heart, it appears, to other parts. Now, the effect of this is to cause a visible and obvious change in the force transmitted by the heart to the arteries. In expiration, the motions can be observed by the jerking which the blood gives to the beat of the heart. Some of the beats rise higher and some lower, in expiration. They rise less in inspiration, showing that the heart is subject to pressure on one side, as well as pressure on the other. Now, this is not perceptible in the usual states; but in some instances, where the heart's action is very low and very feeble, it does become obvious, as in case of softening of the heart, where the heart's beat at the chest is quite regular, and the pulse at the wrist is quite irregular, exhibiting trong and weak beats,—and if you examine theses strong beats, felt at the wrist, you will find they occur in the act of expiration, and the weak beats correspond with the act of inspiration. This is a point which has been clearly established, shewing the influence of morbid respiration. Further than this, in the act of dyspnœa, the muscles of respiration are thrown into greatly increased energy, and then these different disturbances, acting on the heart, are increased in force. Again, there is another mode in which the respiratory organs modify the pulse—their enormous vascular connexions with the heart, which subject it to pressure; and when the heart is diseased the circulation is diseased, and the effect of the pressure is to cause a remarkable disturbance of the pulse. This occurs in diseases of these organs. Anything which impedes the respiration causes a difficulty in the transmission of the blood through the lungs; there is a distended state of the right side of the heart, together with an increase of the dark blood, and an insufficient supply of arterial blood to the heart—and, under these circumstances, the heart's action is often excited, and the pulse may be strong. But, sometimes, in extreme diseases, it becomes weakened from the imperfect supply of arterial blood. Disturbance in the action of the heart sometimes consists in violent palpitation, and it sometimes passes into a state of collapse or weakness, exhibited by the great irregularity in the strength of the rhythm of the pulse. And it is for this reason—the great pressure in some diseases of the respiratory organs, pneumonia, bronchitis, and very extensive pleurisy—that the pulse seldom remains for a long time hard and strong, although the vascular system may be much more active, and the action of the right side of the heart more distinct, yet, inasmuch as the left side receives but little blood, its action is not strong. This is a very important point to notice. Other parts of the circulation, sometimes, are remarkably affected by disease of the lungs. The superficial circulation in the face, or in the cheeks, and so forth, is peculiarly liable to exhibit the imperfect circulation, and the superabundance of dark blood. So, likewise, some of the organs are peculiarly apt to become congested from bad circulation. Whenever the venous circulation is impeded, the liver is apt to suffer. There are, perhaps, many reasons why this organ is liable to suffer, and there is one—I think, a true one—pointed out lately by Shaw; that is, that respiration contributes to the circulation of the blood through the liver. The hepatic system is remarkable for its openness, and the gaping mouths of the vessels. When you make a deep incision in the liver, you see a great number of vessels commonly open; these branches of the hepatic vein are usually filled with blood, and it appears that pressure on the liver, produced by full and forced expiration and inspiration, internally contribute to the circulation of the blood in the liver.

Heat of skin, when present, is an important sign of disease of the respiratory organs, inasmuch as it indicates the presence of inflammatory fever, — and this appears more a local sign of inflammation, and confirms the diagnosis, giving a very good idea of the existence of inflammation; because, when you go to the treatment, you find it is a most important point to notice whether there is a tendency in the disease to increase, and hence, if heat of skin is present, it is a valuable sign. But you are mistaken if you expect to find heat of skin in all inflammations, or to find the absence of heat of skin where there is no inflammation. It may exist without inflammation being present ; and when inflammation is present, and although the symptoms increase, it is very rarely in proportion to the amount of disease. You are struck with this in pneumonia, and more particularly in asthenic bronchitis. Another cause of error, important to be borne in mind, is, that the increased heat that is felt during inflammation is not always febrile—not always accompanied by dryness of the skin. It is often augmented by profuse perspiration, which tends to carry off the heat. It is only in the mere sthenic, or inflammatory form, that the heat of skin is constant and uniform. Even this continuance of perspiration, without any obvious cause, implies an increase of heat; for if the calorific power is in the natural condition, this perspiration will soon terminate in coldness. Inflammation, as indicated by the heat of skin, is a very valuable symptom, taken in conjunction with other symptoms, as a guide to the treatment.

Now, you can understand easily, without going over the matter again, how the general symptoms come to be useful, chiefly by being correctly interpreted according to their true cause. Now these symptoms should always be taken in conjunction with others; for the general symptoms, although of very great value assisted by physical signs, are extremely delusive when judged of by themselves. The physical signs are of very little use as a guide to the direct treatment. Of what avail is it to find out the phenomena of the chest, or to find out that there is crepitation, which depends on viscid liquid in the smaller bronchi, and that this viscid liquid is dependent on inflammation,—if we do not know the state of the constitution? Inflammation of the lung is not always to be treated in the same way. In many cases it is not only proper not to use antiphlogistic means, but we must use stimulants. We must know the state of the body in order to know how the treatment will act, in order that we may adapt our treatment to the local mischief. These things are mutually adapted to each other ; the physical signs guiding us to the local disease, to tell us the nature of that disease, and the general symptoms assisting us likewise in telling us the nature of the local disease, but chiefly indicating the manner in which the system suffers from local disease, and pointing out to us how certain matters may be brought to bear upon, or may be brought to assist in the removal of the local disease.

Before I describe the diseases of parts of the respiratory apparatus, I must just advert to the termination to which they tend. I will take for instance, dyspnœa or difficult breathing, which is representative of the mischief done by diseases to the respiratory apparatus, constituting what is called asphyxia, or aphonia ; here we have to consider what it tends to, what is its tendency. This is important to notice, not only because it constitutes the chief part of many pulmonary diseases, but because it may occur separately. The causes of asphyxia are the same as those of dyspnœa: these are sometimes exaggerated, and if continued long enough to impede the vital functions, it may be fatal. But the phenomena, or symptoms, vary very much with the cause, and there are varieties of causes, as I pointed out in the table in the last lecture. In all these different causes you find more or less labour in the action of the voluntary muscles of respiration; where there is a violent gasping for breath for some time before death, there will be, in fact, symptoms of dyspnœa, of a very aggravated form: it is not merely a struggle for breath, but a struggle for life, and this struggle ends sometimes by death. These symptoms are, as I mentioned before, lividity of the countenance; the pulse variously quickened and irregular; the eyes suffused; the head congested, as seen by the fullness and lividness of the face; flashes of light appear before the eyes; noises in the ear; stupor and insensibility; and likewise convulsions or spasms; the respiratory efforts ceasing before the pulse ceases. In all these cases, too, the state of the organs after death bespeaks the disordered state of the respiratory functions. You see this in cases where asphyxia has been suddenly produced. You see the organs greatly distended—enormously so ; and this extends not only to the immediate neighbourhood of the heart, but to the large veins, and you see all the vascular parts injected with dark blood, which is usually imperfectly coagulated, and seems to want the arterialising process to contribute to the formation of fibrine. Whilst this condition of the blood is exhibited by the venous system, many of the pulmonary vessels of the left side of the heart and the arteries are very empty, or contain very little blood.

Muscular Rheumatism.—This disease was excessively prevalent in the last two quarters of the year.

PRIVATE COURSE OF OPERATIVE SURGERY.

By J. NOTTINGHAM, Esq., Member of the Royal College of Surgeons of London.

LECTURE VIII.

The tarso-metatarsal amputation of any one of the three middle bones, of two of them, or of the three altogether, as will be readily perceived, is no very easy or inviting operation, it is tedious, and of necessity very painful; but for the purpose of illustrating the mode of performing it you may be referred to the observations in a former lecture, on the "carpo-metacarpal amputation of the index, middle or ring-finger," (*Medical Times* p. 312.) remembering however that such operations on the foot are much more difficult than the corresponding attempts on the hand, for the roots of the matatarsal bones are very closely applied together, and their extent from the dorsal to the plantar surface is so considerable as to make the operation of rooting them out a very troublesome undertaking. Nevertheless, at their hinder extremity, these bones, particularly the second, and third, or the two inner ones of the three we are now speaking of, are wedge-shaped, and with the edge toward the sole of the foot, making their removal much easier than it would have been if the opposite form had prevailed.

OUVRARD removed the third and fourth metatarsal; and even the second has been removed singly with its corresponding toe by MACFARLANE. In most cases, however, where such operations might be practised, the section of the bone or bones anterior to the root with the saw or the forceps should be preferred, unless the portions of bone, which would thus be left behind, have already become diseased, or have suffered from injury. It is already understood that in the last-mentioned operations, the integument in the sole of the foot is not to be wounded, the incisions only affecting the dorsum and the skin at the root of the toes.

Medio-tarsal Amputation, or Operation of Chopart. Is the last of the three transverse operations alluded to before, which takes away the five anterior bones of the tarsus, leaving only the astragalus and os calcis behind.

In general terms we may say that the joint (although there are two) which crosses the foot in front of the bones to be left behind, is deep from above downwards, so that the flap from the sole for covering the denuded bones must be long from behind forwards, added to which it is better to have a short flap on the dorsum just to hang over the upper border of the bones in question.

Feel for the prominence at the hinder extremity of the metatarsal bone of the little toe; make a black dot with a pen and ink about half an inch behind this prominence; from this dot a line may be drawn across the dorsum of the foot, the inner part of which will pass over the scaphoid bone, perhaps nearer to its anterior than to its posterior margin. Such a line then outwardly will be over the cuboid; inwardly it will be over the scaphoid, and these are the bones we have to remove from the others to be left behind.

In some feet, the half inch from the metatarsal, as just mentioned, may not be sufficient, and a little more may be taken according to circumstances. The line as above marked out is to be followed by the knife, an assistant fixing the leg and ankle, the surgeon holding the fore part of the foot in his left hand. The integument divided, its cellular connection with the skeleton of the foot is to be a little way dissected up on the dorsum, and the skin drawn upwards at the same time by the assistant.

The heel and the ancle are now very firmly held by the assistant, so that the bones of the leg, the astragalus, and os calcis, are more or less immoveable. If when the above condition is well attended to, the surgeon boldly depress the anterior part of the tarsus, the dorsal ligaments over the line of disarticulation will be put well on the stretch, which being cut with the point of the knife, the sought for joints will gape; but before the surgeon can pass the knife through the articulations to reach the sole of the foot he must divide freely that strong interosseous ligament, holding together the astragalus and os calcis, and also tying them to the scaphoid and cuboid, thus establishing a sort of quadruple alliance which the operation is bound to sever. The division of this ligament, which has been called the key of the disarticulation, is not attended with any difficulty, for the joints on the dorsal aspect once being opened, the knife has only to enter and traverse them in the line which their gaping indicates, to cut through the ligament in question. Having arrived at the sole of the foot, the plantar ligaments are to be divided, which will require the application of the point of the knife; after which the plantar flap must be formed by turning the edge of the instrument towards the toes, and carrying it onwards closely beneath the bones of the foot, to be gently slanted out immediately behind the roots of the toes; for even this length of flap will not be too much for neatly covering the exposed surfaces of the astragalus and calcaneum in most of the cases we operate on. The flap should be somewhat longer on the inner than on the outer side, as it has to mount higher in front of the astragalus than on the outer side where it is applied to the exposed front of the calcaneum.

In forming the flap, the surgeon should bear in mind the bony tuberosities on which the knife might strike, as also the hollow of the metatarsus along which the instrument has to pass.

Any surgeon who has studied moderately well the skeleton of the foot, and who bears in mind that the operation of Chopart divides the foot about an inch in front of the ancle joint; that on the inside the knife enters immediately behind the protuberance of the scaphoid, and on the outside, behind the protuberance of the fifth metatarsal bone (but about a finger's breadth behind it); that the anterior surface of the astragalus is rounded and received into the corresponding scooped surface of the scaphoid; and that the anterior aspect of the calcaneum presents a waving surface, for which we need not invent any other name, will have no great difficulty in effecting the disarticulation, and thus removing that part of the foot which may be the subject of disease.

The bony prominences hitherto noticed and recommended to the attention of the surgeon for his guidance, are on the inner and outer *borders* of the foot. There is, however, one prominent part on the *dorsum*, about the middle, and somewhat less than an inch in front of the ancle joint which was especially noticed by Dupuytren: this is formed by the head of the astragalus, rising above the level of the scaphoid, with which it is articulated; and immediately external and posterior to this is a hollow which may be felt by pressure, and which lodges the greater part of the interosseous ligament, the key of the disarticulation before mentioned.

In some cases, where the foot is swollen from disease and the cellular texture œdematous, it may not be possible to recognise any of the bony prominences or depressions above indicated; we may always recollect, however, the position of the joints to be opened with regard to the ancle joint, and but very, very few instances will occur where the prominence at the hinder extremity of the fifth metatarsal bone cannot be felt.

As far as this hitting the joint is concerned, as far also as the danger of getting into a wrong joint is concerned, let it be remembered that the main risk is on the inner side of the foot, for behind, and a little above the joint to be opened, is the ancle joint, and in front of the joint to be opened, is the anterior articulation of the scaphoid with the cuneiform bones, only separated from the joint through which the knife has to pass by the breadth of the scaphoid itself.

To get into the wrong joint in front of the scaphoid, would be no very serious accident, as it could easily be remedied by carrying the knife a little further back, but by ill-luck, or bad management, to get into the ancle joint, would be a grave matter, and might be followed by serious consequences.

Before proceeding to the performance of the operation of Chopart, the young surgeon should carefully examine the position of the astragalus, in the articulated skeleton, if he have time and opportunity to do this, and he ought especially to notice the position, extent, and approximating borders of its different articular surfaces; this expression of approximating borders is employed in allusion to two lines which bound corresponding articular surfaces, the upper supporting the tibia, the anterior being applied to the scaphoid, and these articular surfaces will be found to approach very near at that point where, on the dorsum of the foot, the prominent head of the astragalus is felt; and the object of these remarks is to put the operator on his guard with respect to the vicinity of the two joints in question, and that such a caution is more or less important will be readily admitted, if we call to mind the fact that the ancle-joint has been unfortunately opened in attempts at performing the operation of Chopart; and that such an accident might easily occur will be seen at once, if we examine the surfaces on the astragalus to which attention is now directed, and that it might occur to any one is obvious, when we know that M. Roux in one case met with it, and determined to use the saw when he found he had got beyond the articulation of the astragalus and scaphoid. In this case the patient died.

It might be said, then, that the key to the performance of the operation with facility, is the adroit division of the strong interosseous ligament; while it might also be said that the key to the performance of the operation with security, is the adroit avoiding of the ancle-joint, bearing in mind directions such as those which have been given, but more especially remembering the size, position, extent, and connexions of the astralagus, not forgetting that the two articular surfaces we have noticed, and their approach at the outer border of the bone, form the most important object of consideration. With regard to the instruments employed, an ordinary bistoury will suffice for the division of the integument on the dorsum of the foot, as also for the opening of the joints; but a longer knife is required in forming the plantar flap; the operation may, however, be very well performed with one rather long, stiff, and narrow knife. In determining the points for commencing the operation of Chopart, the surgeon cannot be too well acquainted with the bony prominences on the borders of the foot, or with any thing of the like nature, or utility, to be found on the dorsum; for this reason we may be allowed to group them as follows for the purpose of assisting the memory.

Internally there are, 3 prominences.
Externally there are, 3 prominences.

On the dorsum 1 prominence and 1 depression, and these all belong to the malleoli and tarsus, with one exception on the outer border of the foot, viz., the projecting root of the metatarsal bone of the little toe.

The internal set, enumerating them from the ancle forwards, consist of prominences formed by the inner malleolus, the scaphoid and cuboid bones.

The external set, consist of the prominence formed by the malleolus posteriorly, of the prominence formed by the hinder extremity of the metatarsal bone of the little toe anteriorly, and of another prominence between them on the outer and inferior border of the cuboid bone; the latter, however, is not so well marked, consequently not so easily found as the former. The prominence on the dorsum of the foot is formed by the astragalus; the depression on its outer side is between the latter bone and the os calcis; it lodges the greater part of the interosseous ligament which we have more than once alluded to before. If in any case the projecting points of bone belonging to the scaphoid and cuboid at the sides, and to the astragalus on the dorsum of the foot can be determined in a satisfactory manner, the line of the disarticulation is immediately known, and a main difficulty of the operation surmounted. Although many words have been employed in the description of this operation, indeed more than I could have wished, it is in reality very simple. A little while ago, I performed it twice in one week on the living subject; on one man of about 40 years of age, on another of about 50; the operations are mentioned here as occurring with but a short interval, for the purpose of adding, that the rules before laid down for the performance of the opera-

tion, having been followed in doing the first, we did not consider that any modification was desirable at the performance of the second, the two cases of diseased tarsus being very similar; it is scarcely requisite to add that the joints across the foot being once hit, no succeeding step is, in ordinary cases, attended by any difficulty.

It is well to be provided with a small saw in case any ossified ligament or other obstacle to the completion of the operation in the ordinary way, should render the employment of this instrument necessary—indeed, the saw should always be at hand in cases where we are about to perform any of the previously described disarticulations of the foot; for, in some instances, the precise extent of disease cannot be known before the parts affected are more or less exposed by the operation.

In the practice of Mr. Bickersteth at the Liverpool Infirmary, I have seen the saw applied, and with the greatest success, to the removal of a portion of the tarsus and the parts of the foot anterior to it, in cases of accidental injury, such as frequently occur to labourers on the railway, passing the instrument through the anterior part of the cuboid and through the cuneiform bones, and in this way preserving as much of the foot as possible, a matter of great importance to every one, but more especially to those who earn their bread by the sweat of their brow.

It seems almost impossible to define the various modifications of surgical operation that may be required in cases of disease of, or injury to, the foot: by way of general remark, however, we may say, that as much of it as possible ought to be preserved; it should never be shortened more than we can help; and that operations by which its outer or inner borders are taken off, should be very carefully performed; and that we should be more especially desirous, in all cases where it is practicable, to preserve the great toe and the corresponding border of the foot; the importance of which in standing and locomotion need not here be mentioned.

Having now spoken of the three amputations of the foot, as well as of the removal of smaller parts of it, we proceed to describe the three articular amputations of the lower extremity at the ancle, knee, and hip joints, the last of which is occasionally required; but, perhaps, we might say, that the former ought never to be performed, and that amputation at the knee joint is seldom to be preferred to that of the thigh higher up.

Amputation at the Ancle-joint

Has been recommended by some French surgeons of eminence; but from the nature and position of the articulation, and the difficulty of procuring for the patient a good artificial support for the stump, there is reason to think that it ought to be entirely rejected.—Those who have noticed this operation have generally said that the projecting malleoli, if found to be much in the way, may be removed by the saw, a mode of proceeding which of course, in a great degree, changes the character of the operation, which could in such case be no longer regarded as a simple disarticulation.

A semilunar flap is made in front of, another behind the joint; these are joined at the sides, so as to form a semilunar flap on the sides also; the integument being raised, the surrounding tendons are divided, the joint opened, and the foot removed. The reunion is effected by approximating the anterior and posterior portions of the integument.

Amputation at the Knee-joint

Here, as at the ancle, an anterior and a posterior flap may be cut, so as afterwards to cover the exposed end of the femur by their approximation; the patella may be left, but its removal is recommended; or one flap from the anterior or posterior aspect of the limb may be so cut, as to cover the whole of the exposed surface of the femur, the flap being turned backwards in the one case, forwards in the other, as the circular operation may be performed three or four finger breadths below the patella, the integument turned back and the joint traversed by the knife.

On the dead subject, the neatest operation is performed by making an anterior flap, sufficiently long to cover the end of the femur, and even to mount a little behind, so as to carry the cicatrix out of the way of that pressure to which the end of the stump must be afterwards exposed. The inferior border of this oval flap should be cut about three finger-breadths below the ligamentum patellæ, whence its lateral borders should mount a little towards the popliteal space; the inter-articular cartilages should always be cut away, and the patella may be taken from the anterior flap when the leg is already removed.

This operation is but rarely resorted to, and can only be of use in cases where the end of the femur is perfectly healthy, and where the disease or injury approaches the knee too nearly to allow of the high amputation of the leg; we should recollect, however, that the fact of its being seldom performed, ought not to prevent our doing it in any case where it might seem desirable.

Amputation at the Hip-joint.

Suppose it on the left side, the surgeon places himself on the outside of the limb to be removed, holding a catlin of great length, strong, and with one cutting edge, and sharp on the opposite side, only about two inches, or even less, from the point; this instrument is passed through the outer and fore-part of the limb in front of the joint, entering between the trochanter major, and the anterior superior spinous process of the ilium, but rather nearer to the latter, passing closely upon the capsular ligament of the joint, and transfixing the skin on the opposite side, not more than two or three inches from the anus; the knee is now a little raised, and a long anterior flap is cut; the knee is next allowed to fall so as to cause the head of the bone to start forward, as if it were about to burst the capsule of the joint, which is next boldly opened with the point of the knife, the head of the bone being now made to start more forward, the round ligament is divided, and the knife being passed behind the neck and head of the bone, is carried downwards to form a shorter flap behind.

The assistant having introduced his finger into the wound, seizes the femoral artery, and thus secures it before the surgeon *cuts out, and thus divides it* in making the first flap.

I have here described the operation such as it appears to me to be most easily and speedily performed on the dead subject, viz., with one anterior and long, and one posterior and short flap.

Here, however, the methods of operating are numerous, while fortunately the application of any of them is rare, and even when from dire necessity the operation is performed, the success is by no means flattering. As is very evident the limb may be removed, making a flap anterior, or posterior, internal, or external, and in completing its separation, an opposite flap may or may not be cut; if the first be very long, the second will not be required, and *vice versa.*

With the aid of an incision, such as is above indicated, the neck of the thigh-bone being exposed may be sawn across, and the head of the bone left in the socket, if for any reason this mode of proceeding be preferred.

We cannot quit the consideration of this very grave operation without a notice of the importance of making every preliminary preparation for it as perfect as possible; the table on which the patient is placed should be heavy, solid, and firm, not too wide, and the sound leg of the patient tied to it; one assistant takes charge of the anterior flap and the artery it contains, another holds the penis and scrotum aside, a third holds the limb to be removed, a fourth holds and effectually steadies the pelvis, a fifth, placed behind the patient, supports his shoulders, and at the same time prevents any violent motion of the upper part of the body; the assistants employed ought themselves to be good surgeons, and should be made well acquainted before-hand with the mode of proceeding which the operator intends to adopt, that they may act easily and in unison with him, and thus facilitate as much as possible the speedy removal of the limb.

The incisions being so extensive and the vessels so large, every effort should be made to prevent hæmorrhage as much as possible during the operation, and to secure speedily the divided vessels by ligature immediately after the limb is removed.

The practice of taking up and tying the femoral artery previous to commencing the operation, has few or any advocates in the present day.

While the surgeon passes the knife downwards in making the anterior flap, it should be kept as closely to the bone as possible, and the knee at the same time a little raised by the assistant, that the knife may be carried fairly behind the femoral vessels, which will thus be divided only when the instrument is brought out.

Here this lecture may be brought to a close, in which, without mentioning some of the minor operations about the toes, we have treated of three transverse and articular amputations of the foot, and of three articular amputations above or at the ancle, knee, and hip; and by way of assisting the memory it may be remarked, that in the amputations of the foot, the flap in each case is brought forward, being obtained from the sole, while on the other three articular amputations, it is carried backwards—surgeons generally preferring to take it from the fore-part; for even in the ancle-joint operation, should it ever be done, a main flap might be cut in front, and carried backwards under the ends of the bones, so as to remove the cicatrix from the central parts of the stump.

It has not been thought requisite to give special directions in any of the above cases for the application of the tourniquet, as in all the amputation above the foot this protection is known to be required, nor yet for the tying of the divided arteries after each operation; but here it may be remarked that the surgeon cannot be too careful about all that regards the prevention of secondary hæmorrhage, always a very troublesome, and not unfrequently a dangerous accident; every artery, then, presenting a gaping mouth should be tied, and little suspicious and lurking points of cellular tissue or muscular fibre, supposed to contain an artery too far retracted to be seen, may be treated with torsion.

SHORT APHORISMS ON THE TREATMENT OF UTERINE HÆMORRHAGE.

By CHARLES CLAY, Member of the Royal College of Physicians, London, &c. &c., Lecturer on Medical Jurisprudence, Manchester.

Radical Treatment of Hæmorrhage where the Placenta is attached wholly or in part over the Os Uteri.

This is at all times a most serious case, and one of the highest importance to the obstetric practitioner, requiring great presence of mind, and the most prompt assistance when the plan of operation is determined upon; otherwise, the chance of success is but small, the life of the patient being placed in the most imminent danger by a fresh gush of blood at every return of uterine action, and every gush is a step nearer the grave. If hæmorrhage occurs in the earlier months of pregnancy, it is most probably from this cause; fortunately, in proportion, this dangerous case is of rare occurrence. Whenever the case is fully ascertained to be one of this class, which is not very difficult, bearing in mind that instead of some portion of the fœtus presenting on making examination, the soft cushion-like mass (the placenta) is presented to the finger, the flow of blood is not gradual and constant, but comes away in gushes at every pain, whilst in the intervals between the pains no flow of blood can be ascertained; strictly speaking these are not cases of uterine hæmorrhage, but *placentar hæmorrhage*, the flow of blood not being directly from the inner surface of the uterus, but from the vessels forming the placenta which are torn asunder at every effort of the os uteri to dilate. On the supposition, then, that such a case exists, the question is *what is to be done?* It is evident if the most prompt measures are not resorted to, and that immediately, the patient must surely die; no one thing should then be left untried that has had the sanction of custom and experience in such cases; after which (should the patient die) the practitioner will have the consciousness of having done his duty, more than which could not be required; a very different feeling to that of having left the patient to die, or failed to do what is esteemed necessary. Nevertheless, I am of opinion that in placentar hæmorrhage, in many instances, the *dernier ressort* is often prematurely acted upon, I mean in proceed-

ing to deliver. I admit, when delivery is determined upon, it should be accomplished without loss of time, but a greater degree of discrimination is requisite, than has hitherto been the practice, by obstetricians generally; the very frequent fatal results of placentar presentations are convincing proofs that some improvement in practice would not be misapplied. It will be recollected by the readers of the Medical Times that I have already written extensively on this subject in the last vol. (6th of the Medical Times, p. 194) which observations were in answer to Dr. Robert Lee's Clinical Reports of Midwifery reported in the Lancet, of June 4th, 1842. Reports of such an extent as to fatality, that they required (in my opinion) some investigation. It will be in a great measure useless for me to repeat, here, the particulars at length, which I then introduced, as they can be easily referred to; the substance of my remarks on Dr. Robt. Lee's Report, however, I will here very briefly recapitulate. 1st. That in most, if not all cases of placentar hæmorrhage, where the os uteri was very triflingly dilated, and of a thick, rigid, and unyielding character, *the case was one of premature labour.* 2nd. That where the os uteri was thin and easy to dilate, full utero-gestation might be allowed to exist. 3rd. That in the *first*, the propriety of delivery is very questionable, if not highly pernicious, and this is borne out by that class of cases furnishing nearly all the fatal results in obstetric practice under the head of placentar presentation. To meet this difficulty, I have proposed, what I have many years proved to be the safer practice, viz.,—that where there is reason to believe the case short of the full period of utero-gestation, with a thick, rigid, unyielding os uteri, to give a powerful opiate, uncombined with any stimulant, not the tincture, but the crude opium to the extent of two or three grains, which will frequently have the effect of putting an end to uterine action, and very frequently enable the patient to arrive at the full period of gestation, when, although, the *placenta still presents*, the os uteri is thin and easy to dilate, and the result of the case is far more satisfactory, as is proved by the very statistical tables of those whose practice is so contrary. I am convinced, that without loss of time, the point should be ascertained, if the patient be at the full period; if not, this opiate plan ought not to be omitted; *true, it may fail*, but that only renders other measures more justifiable without at all throwing any obstacles in the way of future operations. To bring your patient as near the full period of utero-gestation (in these cases) as possible, ought to be the golden rule of every obstetrician.

Trusting these remarks will have their due consideration in all such cases where there is reason to suppose uterine action premature, I will, now, proceed to consider the case as one requiring further efforts, viz., under the supposition of the full period of gestation having arrived. And, here, I may be allowed the remark, that I have seldom found the os uteri so thick, or unyielding, but in such a state as to facilitate future endeavours for the preservation of life. It very often happens that the placenta is not adherent over its whole surface to the os uteri; when this is the case, a small portion of the membranes is found protruding at some part of the circle, a matter very easy of detection from the very different feel to the finger, when compared with the peculiar and well-known feel of the placenta. In many instances where the placenta is adherent, but to a small portion of the os uteri, the delivery may be completed naturally without very much hæmorrhage, but this cannot in the least apply to cases where the placenta is more extensively, or wholly adherent to the os uteri. If the placenta be but slightly attached to the os uteri and the pains expulsive, it would not be wise to hurry with any attempts at manual delivery, as the hæmorrhage is seldom of an extensive character; but to watch the case carefully for a few pains, as it is not improbable that the whole may be accomplished by natural efforts, and with safety; but this must not be relied on in all cases even of slight adhesion; much will depend on the time hæmorrhage has existed, the state of the patient, firmness of adhesion, &c.

When are we to have recourse to Art?—The quantity of blood lost, must be carefully considered, the manner in which it has been lost, the character of the discharge at the present; if these are serious, if there is alternate syncope and flooding, if there is a pallid countenance, if there is sighing, and talk of dying, then, indeed, the case is one where hope is almost hopeless; nevertheless, all that can be done must be done, and that without delay. Compression on the external parietes of the abdomen over the uterus, and immediate delivery of the fœtus through the placenta, for which purpose the os uteri must be fully dilated; in doing which rashness must be carefully avoided, not forced at intervals, but gradually, steadily, and perseveringly, dilated; indeed, it should always be a maxim in midwifery, *never to withdraw your hand without accomplishing the purpose for which it was introduced.* Midwifery too meddlesome, as Dr. Blundell has justly and often observed, is bad; every fresh introduction of the hand adds but to the existing difficulties, and he who accomplishes his object with the fewest examinations ought to be esteemed the best practitioner.

Method of Extraction.—If the adhesion be partial, but still sufficient to justify, along with other circumstances, attempts to deliver, the hand of the practitioner should be passed by the placenta, on the side where the membranes present, which must be ruptured, the child seized and extracted, on the general principles of footling cases. But if the adhesion of the placenta be over the whole surface of the os uteri the case is very different. The finger should be passed round the circle of the os uteri to ascertain if its adhesion may not be weaker at one point than another; which if it is, it would be advisable to pass the placenta at that point and proceed as just stated in partial adhesions; by this plan there is less liability of extensive hæmorrhage. But if this is not practicable, and the adhesion firm on every side, then the hand must be formed into a cone, and the placenta pierced by it, and the child delivered as before, but through the placenta. In the endeavours to accomplish this, the resistance has in some instances been so great as to force the placenta from its position, and it has been pushed forward, and subsequently delivered along with the child. In cases of this description, the danger of hæmorrhage does not terminate with delivery; there is still great liability to heavy floodings subsequently, and every care should be taken to procure a well-contracted uterus after its contents are evacuated, for which purpose, compression by well-applied bandages, and also friction must not be lost sight of.

Cause of Hæmorrhage in Placentar Presentations.—I have already said that it arises from the laceration of the placentar vessels, by uterine pains, accomplishing dilatation; that it is not strictly uterine, but placentar hæmorrhage. The child is generally dead, in consequence of the destruction of that organism by which it has hitherto been maintained. If the case has been promptly attended to, the child may not have been dead long, and, therefore, attempts at resuscitation must not be neglected. This brings us to the consideration of hæmorrhage during the third stage of labour.

(To be continued.)

AT A MEETING OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

Held on the 28th March, the President in the Chair, the following papers were read:—

1. On two remarkably similar cases of osteo-sarcoma of the thigh bone, requiring amputation in both instances, by R. A. Frogley, Esq., of Hounslow, in whose practice they occurred. Communicated by Samuel Lane, Esq.

The first, is that of a female, aged 26, who had a tumour of the thigh, which increased, in its greatest diameter, thirty-five and a half inches, and reached from within an inch of the trochanter to the knee-joint. It began in the summer of 1829, with a pain in the inner condyle of the femur, and in May, 1830, a tumour had formed of the size of the half-closed hand. It continued gradually to enlarge, without pain, or discoloration of the skin, or materially impeding the motions of the limb till March, 1834, when the limb was amputated. Owing to the close proximity of the upper part of the tumour to Poupart's ligament, it was anticipated that it might be necessary to disarticulate the bone at the hip-joint, but, in the course of the operation, when the two lateral flaps had been made, the femur was found in a healthy condition, below the lesser trochanter, and it was sawn through at that point. Mr. Lane, who assisted, compressed the blood-vessels with his fingers, by pressing on the external iliac artery, so that scarcely any arterial hæmorrhage took place; what little occurred, was immediately arrested by another assistant, grasping the flap until as many as ten ligatures were applied. After the operation the patient caused much alarm by falling into a faint, in which she gasped as in articulo mortis, but she was soon restored from this condition. The stump healed favourably, and there has been no return of the morbid growth. A longitudinal section having been made of the thigh bone and the tumour, it was seen to consist chiefly of a whitish, elastic, hard tissue, resembling cartilage, but rather more transparent. There was very little deposit of osseous structure in it, and the tumour appeared more connected with the periosteum than with the bone itself, which could be readily distinguished in the morbid mass from preserving its sound condition. Numerous cysts communicating with each other, as with a large central cavity, were developed in the tumour, and these contained several pints of a yellow tenacious honey-like fluid.

The second case is that of a married lady, aged 37, who had also a tumour of the thigh. The swelling was first observed eleven years ago, as a hard lump, about the size of half a walnut, situated in the inner condyle of the femur. When seen by Mr. Frogley, five or six years after its commencement, it had not increased perceptibly in size, but in five years more it had acquired considerable magnitude, and had extended up the thigh. Finding this had made most rapid progress, so that it measured at its largest part twenty and a half inches in circumference, while the thickness of the limb below was only twelve inches, she consented to undergo amputation, which was performed in August, 1842, and the stump healed by the first intention. Upon making a section of the thigh bone, and tumour, it was remarked that the morbid growth, although smaller than that of the preceding case presented the identical appearances both in position and structure, which have been described in that case. Casts, drawings, and preparations of the tumours in both patients were exhibited.

The President opened the discussion in this paper by an observation on the appropriateness of the term, osteo-sarcoma applied by the author of the paper.

Mr. LANE begged to draw the attention of the society to the plan adopted in this extraordinary case to restrain the hæmorrhage during the operation of the removal of the tumour. The operation, he said, was high up in the thigh; some surgeons preferred tying the *femoral* artery, and others compressing it; but it would be observed that in this case it was not the femoral artery, but the external *iliac* artery that was compressed. As to the propriety of the compression of the artery, he would refer that point to the experience of other surgeons present, who had had an opportunity of examining the case, to enlighten him a little on that subject, as he was not aware that the compression of the external iliac artery was generally adopted by practitioners. Now, in this case, the external iliac artery being compressed, the flow of blood through the other vessels was entirely prevented, and on the finger being pressed on them there was

no pulsation felt. There was very little flow of blood during the operation, shewing that the vessels were affected by the compression. Another point which also struck him after the operation, was the alarming state of faintness caused on the removal of the limb; so alarming was it, that he did not think the patient would recover from it. It had struck him since, that the cause of this faintness was the sudden removal of an immense quantity of blood that was contained in the limb. The weight of the limb with the tumour was more than one-third of the weight of the patient's body; the body weighing twelve stone, and the tumour weighing almost sixty-two pounds, or four stone, six pounds. Of course with that mass, there must have been a very large proportion of blood, and it appeared to him that the great faintness that occurred was produced by the head not receiving the return of that immense quantity of blood; the right auricle being suddenly deprived of perhaps one third of its ordinary supply. Now, he was satisfied that it was quite practical to compress the external iliac artery, but he doubted whether it was the preferable mode of proceeding in this case, and he thought that if the femoral artery had been ligatured, the blood in the limb might have been returned to the system; especially as, by a little manipulation to the limb, by the application of a bandage, a great deal of blood might have been returned from the limb to the circulating vessels, and the state of faintness that threatened the patient's life might have been arrested. He should be glad to hear the opinion of any member of the society upon a similar point. He was convinced, as he said before, that there was no difficulty in compressing the iliac artery. Another point to which he wished to draw the attention of the Society was, the peculiar identity of the position of the tumour in both the cases related in the paper that had been read. Dr. Budd in his ingenious paper on these diseases, in the last volume of the transactions of this Society, had alluded to the circumstance of a similar disease attacking corresponding parts in the opposite limbs, and also the upper and lower half of the body in the same individual, and he had attributed this occurrence to the identity of the texture in the exactly opposite points. This must be extended still further,and applied to similar diseases occurring in corresponding parts in different individuals. Many instances of this kind occurred to him at the present moment.

Dr. Johnson had some doubts about the faintness being justly attributable to the removal of the blood in the limb in this case. He thought there was a very great difference between the removal of such a limb as that, and the withdrawal from the general circulation of a quantity of blood. He thought it was a totally different thing. He did not think that the removal of that limb could make very much difference with regard to the general circulation, and the return of the blood to the system. There was a point bearing upon this, and illustrating his opinion. He recollected the time perfectly well,when the mode of stopping the effects of hæmorrhage practised, was that of putting ligatures on all the four extremities, as high up as could be; and this had the effect of arresting the return of the flow of blood to those various parts. This he had seen himself, and it acted, so far from producing faintness, by accelerating the return of the blood and producing the opposite stage. Now the analogy here was a good deal similar to the case where the limb was entirely removed.

Mr. Lane explained that it was not, as Dr. Johnson seemed to suppose, that the faintness was occasioned by the removal of an immense quantity of blood suddenly with the limb, but rather the prevention of the return of the ordinary quantity of blood to the right auricle, for the right auricle must have been deprived of about one-third of the quantity of blood it had been in the habit of receiving, and it could not adapt itself to this alteration of circumstances in a moment. It did appear to him that the cause of the faintness was the cause of the enlargement of the heart. He did not mean that it produced the same effect as if the patient had been bled to the same extent, but that there was a sudden abstraction of a quantity of blood the heart had been in the habit of receiving.

The President asked if the femoral vein was distended or not?

Mr. Lane replied that it was not at all dilated, nor was there any great flow of blood during the operation, either venous or arterial.

The President said, that with reference to the question put by Mr. Lane respecting the compression of the femoral or the external iliac artery under the circumstances of an amputation so high in the thigh as in the present case, he could say, from the result of his own observation,that it could be effectually made, provided the ligament was placed so high as to press the vessel against the os pubis. He could not say whether it could be done effectually above Poupart's ligament

Mr. Lane observed that he supposed it impossible, under Poupart's ligament even, to compress the artery without compressing the vein as well. Tho finger of the operator could not be placed so exactly on the femoral artery as not to compress the vein along with it.

Mr. R. Alcock said, that though no doubt the iliac artery might be compressed in ordinary cases, he did not think the practice could be erected into a principle. In the majority of cases it was impossible, and not unattended with a great deal of danger. He should be sorry to see it understood that in the ordinary run of cases of amputation near the *trochantor minor* compression of the external iliac artery might be adopted. He should be led to infer, however, from cases he had seen, that there was no difficulty in doing it.

Mr. Partridge.—Were the veins of the limb very large?

Mr. Lane.—No, they were not.

Mr. Partridge.—Then I do not see how so large a quantity of blood could be removed if the vessels were of the ordinary size; the tumour not being a vascular one.

2. Remarks on Gangrene of the Face,and its Treatment, by Henry Obre, Esq.

The author commences with some observations on the condition of the system in children, in whom the disease is most liable to occur, dwelling on the ravages it produces, and its usually intractable nature. He, then, gives the result of his treatment of the complaint, by applying the actual cautery to the sloughing surfaces, as recommended by some continental writers, and describes the success which he has met with. He relates two cases where he adopted this plan. In the first, the gangrene came on after typhus fever, and it proceeded rapidly to destroy a large extent of the cheek. Having tried various other applications unsuccessfully, he had recourse to the actual cautery, and immediate amendment followed, so that the edges soon healed. The appearances before and after the cure, were illustrated by coloured wax casts taken from the patient. In the other case the disease was so extensive, and the child so much debilitated, that the author did not succeed in saving the patients' life; but manifest advantage was gained by the use of the cautery so as to convince him of its beneficial influence in the treatment of the disease.

3. Remarks on Cancrum Oris,and Phagedœna of the Cheek, and on the Effect of Chlorate of Potash on these Diseases, by Henry Hunt, M.D.

The author describes these diseases as being identical, varying only in the degree of severity, both commencing by ulceration of the mucous membrane of the cheek, or where it joins the gums, and that the external eschar is the consequence of the internal ulceration. He considers them to proceed from a cachectic state of the system, that they come on more commonly in cold and wet weather, sometimes attacking several members of the same family simultaneously, and occasionally prevailing almost like an epidemic. The author has healed them very successfully by a free exhibition of the chlorate of potash, the beneficial influence of that salt being generally apparent within forty-eight hours of its being given; that it seldom fails to arrest the progress, and to effect a cure, if administered prior to the patient's being very much exhausted. The quantity of the salt he has been in the habit of prescribing varies from one scruple to two scruples in twelve hours according to the age of the child. Two cases are related in corroboration of the foregoing statement.

Dr. Marshall Hall observed, that gangrene of the mucous membrane lining the mouth was induced from bad living and bad air, and was amongst the worst forms of diseases arising from those sources. How far remedies could be applied to this he was not prepared to say. It was necessary to weigh well the evidence adduced in favour of the remedies brought forward to apply to this dreadful disease. He wished particularly to draw attention to the aspect in which this subject might and ought to be viewed—a medical and legal one. He recollected the case of a patient who died under these circumstances, and, as often occurred in such cases, a great hubbub was made among the ignorant, who declared that the medical practitioner had destroyed the child with mercury: an inquest took place, and the verdict was "natural death." The coroner made an observation that it was still a question whether disease was produced by mercury or not, and, therefore, no such reflections should rest on the medical practitioner. After that case he heard of another, under precisely similar circumstances. In this second case, a most respectable practitioner was arraigned before the coroner,and taxed with having destroyed the child by the undue administration of mercury; and, if the jury had believed that that was the case, there would have been a verdict full of pain to the medical practitioner. But he (Dr. Hall) had happened to see the case, and not a particle of mercury could be found; this testimony had weight with the jury, and they came to a verdict of "natural death." There was another question he wished to draw attention to, and that was the effect of mercury on the teeth. He had heard it stated that, from the free administration of mercury, the teeth had fallen into decay; but it must be remembered, that in some states of disorder of the general health, the whole of the teeth were affected, and, therefore, this decay was not especially connected with mercury. He had seen cases in which this decay had happened quite unconnected with mercury, and in some cases the teeth had become loosened and fallen out. The specific action of mercury required to be clearly known, in order to determine whether decay of the teeth under such circumstances, was the effect of the general disorder or the effect of the remedy administered.

Dr. Webster observed, that he thought the society might take the authority of the author of the paper for the use of chlorate of potash; he believed that it was a most important remedy, and one for which the profession ought to be grateful to that gentleman.

Dr. Johnson remarked that the present generation was remarkable for bad teeth, and he thought it attributable to bad modes of living. It was a common thing to say to a person affected with bad teeth: "oh, I suppose you have taken some mercury in your time, and that is the cause of their being bad." Now he had seen a good deal of mercury used in this country and on the continent, and he had been salivated a dozen times himself (a laugh), but he had never lost a tooth in his life. Mercury, he thought, had been very much abused, particularly by the dentists, who had traduced it more than any other people.

The President said, that every one must be grateful to the author of the paper, who had pointed out the means of averting so horrible a disease as gangrene of the mouth. He referred to several cases, which clearly shewed that the use of mercury had not had any tendency in producing this disease.

TO CORRESPONDENTS.

B. Liverpool.—*The cases and notes will be acceptable. To well authenticated instances of the phenomena alluded to, our pages are freely open. The respiratorytubes—[they are,we believe,of various sorts] may be obtained at Dickens's, 80, Holborn Bridge.*

"One of our Subscribers."—*We do not doubt that if Carlile's bequest were generally imitated,much good might accrue to society; but is Mr. Carlile's example more likely to act as a stimulus to imitation, than a warning from it? If he did much for the liberty of the press, we are to that extent his debtors, and if his life were characterised by conferring very large social benefits on his countrymen, it must be our invincible ignorance of the circumstance which lead us to consider him a very insignificant person. But what* two *estimates of* one *person shall agree?*

K. L.—*The party "of spare person" wishing to be* enbonpoint, *will do well to call on our sub-editor. If his prudence, wit, and flow of spirits will not lead to the discovery of the desired remedy, our correspondent may despair.*

T. B. M.—*Such works as "Manhood" are infamous attempts to debauch the public taste, and swindle money. They are commonly written and advertised, as mere money speculations by a well-dressed bevy of Hebrew scamps, boasting a higher ambition, without being one whit better educated, than their poorer brethren who cry "old clothes." The other fault complained of is rarely hereditary.*

M. M. P. York—Enquirer—Philo-Medicus—Antimonopolist—P. W. X.—*declined,*

C. *will hear from us the first leisure moment.*

M. R. C. S.—*We can see nothing in the circumstance which calls for a change. Whomsoever our correspondent attends, he does not himself cease to be a gentleman. The* back door *is for servants.*

THE MEDICAL TIMES.

SATURDAY, APRIL 8, 1843.

What need we any spur but our own cause
To prick us to redress?

THE lull that must be confessed to exist just now, in reference to Medical Reform, is a lull of action, but not of interest in the subject. Possessing no guiding spirits prominently in our advance, having no leaders whose opinions we are used to respect, and whose calls we are accustomed to respond to, dissatisfaction produced by the pressure of ever-during and deeply felt wrong becomes inert the moment that competent authorities hold out a vague promise of improvement, and nothing will stimulate us into energetic and united movement, but a crisis directly and immediately involving peril to the highest interests of our cause.

But whatever the reasons of our present inactivity, we own that we view it with no favourable feelings. Medical Reform in its full acceptation is too valuable a boon to allow of even a moment's cessation of labour. From the vastness of its object, even the utmost efforts and best directed would fail to gain us all we seek. Every vantage, therefore, we lose in the struggle is so far a diminution of the prize, and every hour unturned to account, is so much strength to the foe and weakness to us.

If ever, indeed, our exertions should have slackened, short of success, this should certainly not be the time. The future fortunes of our profession for probably another century, are at this moment in "the potter's hands." We have the power of moulding our future state much after our own wishes, and its final shape will certainly be regulated by ourselves or our foes in the manner and to the extent as we shall now publicly shew ourselves active or passive. This is certainly strong motive for action—but a motive, we fear, scarcely likely to operate on us.

The direction in which our activity would do us most service is not difficult of discovery. We hear of many who think the great duty, just now, is to petition at once against Sir James Graham's Bill. We are not of their opinion. It is true, we are pretty well informed of the heads of the Bill the Home Secretary once intended to introduce; and it is probable that there will be no very essential differences from them in the Bill of this year; but we think, however deserved, that the language of condemnation is, for the present at least, premature. Legitimately, we cannot speak as though acquainted with the clauses of the new Bill for they have not been formally made known; they may, also, yet be altered—and we cannot see either the wisdom or fairness of committing ourselves to a condemnation of what cannot yet be clearly identified as an offender, and which really is not yet before our judgment-seat The course of *policy* is one similar enough in results, but essentially different in means. It would not prove Sir James Graham wrong—but it would prove us right. We should inundate him with clear expositions of the reforms the profession seek—exhibit to him how strongly our feelings are bound up in them—and prove to him that nothing short of them would ever satisfy or quiet us. We should thus at once enlighten and influence him. We should deliver him from the power exercised on him by the forty or fifty pure surgeons or physicians, who pretend to represent to him the profession to which their corporate interests are so much opposed—we should fairly place before him all the circumstances which claim to be legislated on between ourselves and a few interested placemen—and we should employ over him that moral pressure which must always be imposed on a public character by the authority of the united opinions of some fifteen or twenty thousand practitioners, an authority which would certainly deter from wrong, if it did not force to right.

Si te propositi nondum pudet, atque eadem est mens
Quamvis jurato metuam tibi credere testi.

IF we could indulge a minute's doubt that the following note was intended for publication, we should so much consult our feelings, and the writer's interests, as to confine acquaintance with it to ourself. But as we cannot be expected to carry our kindness to an enemy so far, as to risk the probable imputation of desiring to suppress what, however mistakingly, he thinks matter of self-exoneration, we are coerced to submit to the public, more, far more in sorrow than in anger, a letter with which Dr. Marshall Hall has this week surprised us.

To the Editor of the Medical Times.

SIR,—I have been induced, partly on account of my health, and partly for the sake of quiet, to refrain from perusing the abuse which, I understand, you have lavished upon me in your Journal, and in a communication to the *Lancet* and the *Medical Gazette*, and I have accordingly *not read one word of it*, nor do I, with the exception about to be noticed, know in the least in what it consists.

The circumstance to which I allude, and upon which, as I am informed by a friend, you have animadverted, is that of my very brief connection with a certain Assurance company. I was applied to by a most respectable medical gentleman, and very near neighbour of mine, to accept the office of physician to that company, and seeing the name of my highly respected patient, the late Sir Coutts Trotter, Bart., (Messrs. Coutts & Co.) as its banker, I did not hesitate one moment to do so. *Shortly afterwards* Sir Coutts Trotter called upon me, and asked me whether I knew any of the parties, or anything of the affairs of the said company. I replied, that I did not in the least, and that I had been induced entirely by seeing his name as their banker, to allow mine to appear as their physician. I observed, that Sir Coutts Trotter immediately withdrew his name: whereupon, I as immediately withdrew mine.

I am, Sir, your obedient Servant,
MARSHALL HALL.

14, Manchester-square, April 3, 1843.

Now, we are mistaken if the most ingeniously charitable of our readers can extract from this defence a single point indicating in the writer either a well-governed or a *well-meaning* mind. Dr. Hall, if we are to believe his own assurance, has not read one word of our answer to his grave charge against us—though that answer appeared in our own Journal, in the *Medical Gazette*, and the *Lancet*. What prevented him? He felt in advance—as we learn from himself—that our vindication would disturb "his health"—derange "his quiet!"

Quid pœna præsens consciæ mentis pavor
Animusque culpâ plenus, et semet timens!

The anticipation which could thus alarm him from the perusal of the three medical periodicals of the week, certainly implies not the *mens conscia recti*, and we trust there is not another Englishman in the empire who could coolly avow that he deliberately makes accusations in public journals, and, as a matter of policy to his own feelings, carefully abstains from reading the vindications they necessitate. But overlooking this peculiarity in the greater one offered as its excuse, viz., Dr. Hall's love of quiet—that proverbial characteristic of his—is it creditable to him, we ask, that without having read a line of our *vindication*, he should describe it as "LAVISHED ABUSE," with the placid ease and assurance of a man gifted with an infallible knowledge of every particle of the whole document? He will, first, not hear a word of our proofs of innocence with respect to the accusations he has made against us—and then, profoundly ignorant of them, makes them the subject-matter of a new charge against us! Now, we take leave to say, that *our* "abuse" of Dr. Hall was but the honest, indignant defence of a calumniated man proving his innocence, and repelling slanders to their source—and that *all* the real "abuse" has lain entirely on Dr. Hall's side. He and his friend—for it ap-

pears he has one—have mutually abused each other; he has abused himself; and, finally, he has abused us. Proof of all this has been, or will be, offered.

Dr. Hall, with a delicacy of soul that reminds us of Desdemona's scruples to repeat the name "such as her lord did say she was," proceeds to the defence of "his very brief connexion with a CERTAIN *Assurance Company*." What does Dr. Hall call, "a *very brief* connexion?" One day—one hour—nay, ten minutes' personal intercourse with the low, uneducated, ill-dressed, ill-bred vagabonds who used Dr. Hall's name to assist them in so largely swindling some of the most helpless creatures on God's earth, would have sufficed to convince any man of ordinary perception—certainly, any man of gentlemanly feeling—of the true character of that monstrous conspiracy. Was "the brief connection" that of a day—a week—a month—nay, of a year? Dr. Hall, on so vital a point for his character, is wonderfully unspecific. With a proper sensibility, the very moments of that calamitous partnership would have been scored on the very substance of his heart with a depth and distinctness proportionate to the intense misery each one of them was a cause of to some helpless cripple—some widowed mother—some blighted orphan!

Dr. Hall explains the circumstances which led him to accept the responsible situation of physician to this *plot*—we cannot call it with him a "*Company*." The speculation was a new one—a fact which always inspires caution. The conspirators offered insurances at rates which, as every Assurance Company, and every man of common sense, well knew, could not be offered by an honest partnership, unless composed by madmen. This was an obviously suspicious circumstance. The men named as Directors were perfectly unknown to any one of common respectability; not one of their names could be found in the Court Guide, Blue Book, or even the Mercantile or Professional Directories. Yet Dr. Marshall Hall knowing their real character, or if not knowing, without endeavouring to acquire a tittle of knowledge "of the parties, or of their affairs," connects himself with them in the confidential character of their public physician, and is in that character advertised through the whole extent of the Empire. On what grounds did he this? A medical gentleman, a near neighbour, whose high respectability is still apparently unimpeached, applied to him in reference to it. Now if we allow—which we do not—that it is right or *decent* in Dr. Hall occupying his present position, to cite as witnesses, aye as "respectable" witnesses for him, parties whose very names are denied to us—*except they be dead* like Sir Coutts Trotter—we are yet entitled to ask on what grounds this most respectable neighbour based his application. He clearly knew nothing of the parties—he would have been anything but *respectable* were it otherwise—what therefore could he have alleged to win the plot the honour of Dr. Hall's patronage? We are not told, and it is beyond the powers of our imagination to conceive. He did not deceive Dr. Hall—that is not pretended. They either, therefore, well understood each other, or the respectable practitioner, (was he a Mr. Else?) exposed himself in his true character, the most provocative of suspicion it is possible to conceive, of an agent negociating the most confidential affairs for a body about which he knew nothing.

This defence being worthless, it is alleged that Dr. Hall found his respected, or rather his "*highly* respected patient," Sir Coutts Trotter's name advertised as the conspirators' banker. Would a prudent man in so important a matter, surrounded by such suspicious circumstances, have accepted the Directors' *lying* affirmation for a fact on which so grave a result was to depend as the acceptance of their physicianship, and the adoption of them as associates and employers, without availing himself of his acquaintance with his "highly respected patient the *late* Sir Coutts Trotter, Bart." to the extent of learning the genuineness of their pretension, and putting a question or two as to the extent or nature of their means? Dr. Hall must pardon us, but we cannot help thinking that if he had not had reasons for feeling an extent of charity towards "the Directors," much greater than he has thought it necessary to display towards us, our profession would never have had to mourn over the public's identification of one of our prominent members with the most diabolical scheme of swindling it has ever been the lot of society to lament and stigmatize.

But if Dr. Hall's *ac*cession to the conspirators was extraordinary, and apparently causeless, not less so was his *se*cession. The banker's name was observed one day to be withdrawn, and "the Company's medical adviser," Dr. Hall, who, extraordinary to say, knew no more about the character of his associates than on the first day of his connection, viz. nothing,—withdrew his, an act, the especial reason for which is certainly not as clear as its especial sequence.

From Dr. Hall's statement it would appear that Sir Coutts Trotter treated him, in the interview, as one of the gang. He questions him as to the nature of his connection, and getting the customary police office reply of an accesory, that the interrogated knew enough of the parties to feel it prudent to know nothing of them or their affairs, abruptly leaves Dr. Hall, without telling him that the use of Coutts' name by "the plotters" was a lying assumption, or acquainting him with the nature of his future course. Dr. Hall subsequently saw Coutts' name withdrawn—a fortunate accident—and thereupon withdrew his! A dead patient is always an awkward witness for his surviving doctor. Sir Coutts Trotter is more than usually so!

We regret—we deeply regret—that we are thus compelled to re-open a question which, disagreeable beyond measure to us, is a retributory witness against him that forces it again before the public. Why after an hybernation of so many months, an allusion which cost but three lines making, should be thus warmed into wakefulness and increased vigour, it will be for Dr. Hall's friend to explain and justify to him. For ourselves we can confidently assert that if, amid all the warmth of our injured feelings, we have felt one anxiety more than another, it has been that of publicly demonstrating that, despite all the provocations on this side, and informations on that, we were not to be drawn from our settled determination of exhibiting the most perfect silence on every thing in his career which was private, and the most perfect forbearance on every thing that was public, which made no special or irresistible appeal to the notice of a journal, whose great object is to protect the respectability and high character of the profession.

INDUCTION OF PREMATURE LABOUR.

Dr. Robert Lee, in his Clinical Midwifery, published by Churchill, has a very valuable and important chapter on the induction of premature labour in cases of distortion of the pelvis, cancer of the gravid uterus, uterine and ovarian cysts and tumours, organic and nervous diseases of the heart, dropsy of the amnion, obstinate vomiting, hæmorrhage from the bowels, and chorea during pregnancy. He narrates about thirty cases of distortion of the pelvis to a greater or less extent, in which the operation was performed, in the majority of instances with decided success. He has in some cases been enabled to induce premature labour by separating the membranes from the cervix uteri, but since 1836, has always had recourse to the use of a large probe-pointed stiletted catheter, with which he punctures the membranes, so as to allow of the escape of the liquor amnii. Labour-pains, generally speaking, follow speedily and effectually.

Several of the cases narrated by him in this division of his work assume a higher degree of importance and interest, inasmuch as they present a series of instances of induction of premature labour in the same person, the value of the operation being occasionally shown by its omission through the neglect or unwillingness of the patient to submit to it. The case numbered 123, is that of a lady who had been forty-eight hours in labour with her first child, and when Dr. Lee saw her, he was obliged to open the head, the bones and integuments being much lacerated, before delivery could be completed with the crotchet. On four several occasions after this, premature labour was induced, two of the infants surviving; one being still-born, and the fourth breathing irregularly for an hour after birth, and then dying. Dr. Lee thinks that, in the last case, had the labour been brought on a fortnight earlier, in all probability the child would have lived. In the first case in this chapter, that numbered 121, Dr. Lee was called upon in consultation to perforate the head, and then extract with the crotchet, which he did successfully. Upon two successive occasions afterwards, spontaneous premature labour came on, the children living; the third time she was pregnant, Dr. H. Davies induced it at the seventh and a half month, and the child was born alive, but died soon

afterwards in convulsions. These and other cases of equal importance are sufficient to prove that the practice of inducing premature labour at the seventh and a half month of pregnancy, in slight distortion of the pelvis, is attended with little danger to the mother, and that it has been the means of preserving the lives of children, which must otherwise have been sacrificed. When the degree of distortion is so great that a child, even of seven months, cannot be born alive, the advantages of the operation are no less striking, for although the majority of writers would restrict its application to cases of slighter distortion, where the viability of the child can be preserved, and have further considered it improper to have recourse to it in first pregnancies, and before seven complete months of utero-gestation have elapsed, the safety and utility of the operation must be acknowledged, in obviating the danger to the mother of fatal contusion or laceration of the uterus and vagina, which are always to be dreaded when much force is required after perforation to extract the head of the child. The safety of the mother is of primary importance. Case 130 is one of exceeding interest in illustration of this remark. On the 5th of December, 1829, Dr. Lee was requested to visit a woman of the name of Ryan, 21 years of age, who had been in labour 36 hours, with her first child. The head presented, but no part of it had entered the brim of the pelvis. The orifice of the uterus was about half dilated, and its margin was thin and soft. The short diameter of the brim of the pelvis was estimated at less than three inches, and the distance between the tuberosities of the ischia at two and a half. Both upper and lower extremities of this patient were bad from rickets. Four hours elapsed after the head was perforated before it could be extracted with the crotchet, and not until the bones of the cranium were all torn to pieces. A violent attack of uterine inflammation followed, which had nearly proved fatal. Towards the close of the next year, when in the eighth month of pregnancy, premature labour was induced, the head perforated, and easily extracted with the crotchet. The difference between this and a former operation was very striking. In the succeeding pregnancy, labour was brought on at the seventh and a half month, the feet presenting; perforation was not necessary. The child was born dead. The next time it was induced at the end of the seventh month; again a footling case, and a still-birth! In the fifth pregnancy, premature labour was induced exactly seven months after the last appearance of the catamenia. The presentation was natural, and the child, which was very small, was born alive after a tedious labour. It lived sixteen days, aud then died in convulsions. The sixth pregnancy, labour brought on at seven and a half months, was again a footling case, and great force was required to extract the head. On the seventh occasion she went the full time; the case was a placentar presentation. The operation for induction of premature labour was performed at seven and a half months in her eighth pregnancy, and at seven months in her ninth, with similar results. In her tenth case, attempts were made, and repeated for a considerable time, to induce miscarriage by doses of the secale cornutum, gradually raised from gr.xij. four times a day in infusion, to ʒj, given as frequently. She took in all seven ounces of the secale without producing the desired effect. The membranes, therefore, were perforated about the end of the seventh month, the pains soon came on, and a dead fœtus was expelled in thirty-seven hours. A similar proceeding was adopted on two other occasions with the same woman, who, according to Dr. Lee's report, is now well.

The great value of this operation, which, by the way, was unadvisedly condemned and repudiated by the French Academy in 1827, is shewn very strongly in this case. We have here a young woman, greatly deformed by the consequences of rachitis, so as evidently to be unable to bear a living child, and who nearly lost her life in her first confinement from a violent attack of uterine inflammation, the result of the severe and serious manipulations she was necessarily subjected to in freeing her from her burden, enabled, by the induction of premature labour, at a period when the child is considerably smaller than is natural, to undergo the pains and penalties of child-bearing without incurring the great risk, indeed the almost certainty, of death, which awaited her, if she had continued to bear children, and had gone her full time. What can plead more strongly in favour of that decision of English physicians in 1756, by which this proceeding was, so to speak, professionally legalised, than the details of a series of cases occurring in the person of one woman, such as we have just placed before our readers? In her first confinement, ignorant of her danger, pregnancy is allowed to proceed to the full period, and she barely escapes with her life. Grown wiser by experience, and acting under the advice of her skilful medical attendant, she then next time permits the induction of premature labour at the eighth month. A step is here gained, but still the child was so large as to require the use of the perforator and crotchet. The advantage obtained, however, was that *the life of the mother was not placed in danger*. The succeeding labours were still more interesting and instructive, as when the operation of puncturing the membranes was practised at the sixth or seventh month, the use of the perforator and crotchet could be dispensed with. On one occasion a living child was born, a matter of the utmost importance, had there been any real property depending. This woman, between the 5th of December, 1829, and the 16th of January, 1842, was in labour twelve times, in ten of which premature delivery was induced. Had not this operation been performed in these cases, she would, in all probability, have perished ere the fourth case was completed, from inflammation, hæmorrhage, exhaustion, or ruptured uterus. Dr. Lee, therefore, we consider to be perfectly justified in asserting, that the advantage of inducing premature labour is not less striking in cases of such deformity, that a child even of seven months cannot be born alive, than in those cases where there are hopes of preserving the life of the infant.

Other cases of equal interest are narrated, but from the great length to which this article has already extended, we cannot include them in this notice. Dr. Lee observes incidentally by the bye, that in no case of distortion, however great, can it be necessary to induce premature labour before the end of the fifth month of pregnancy, when the fœtus is so small and soft that it can be easily extracted. The length of the cervix uteri before this period must render it both dangerous and difficult.

The chapter concludes with the detail of cases of malignant disease and fibrous tumours of the uterus, ovarian cysts, organic and nervous affections of the heart, dropsy of the amnion, hæmorrhage from the bowels, and obstinate vomiting, in which the induction of premature labour was, or might have been, employed, with advantage.

ETHNOLOGICAL SOCIETY,

(28*th March.*)

Dr. Holt Yates presided over a numerous meeting, held at Dr. Hodgkin's residence, 9. Lower Brook Street, and was supported by Assaad Jacob Kayat, Rear-Admiral Sir Charles Malcolm, Sir Duncan Macdougall, Sir Alexander Morison, M.D., and Dr. Burton, &c. The subject for the evening was a paper "On the New Zealanders," with illustrations, by Dr. Pineo, R.N. The population according to the author, has fallen off very considerably within the last 30 years, and is attributable to three principal causes. Long and bloody wars between the different tribes,—infanticide, and disease, chiefly scrofula. That the two first causes act powerfully in effecting a diminution of numbers all must admit, but considering that the larger portions of the uncivilized races have little or no knowledge of fire arms, the destruction of life from warfare, cannot be great. Disease is the destroyer that threatens, and in many cases effects the extermination of whole nations; witness the case of the Mandans, recorded by Catlin, a nation swept away in a few days by small pox; that of the natives of Port Jackson. New South Wales, by the same cause, and of other families of man. As the Ethnologist proceeds with his researches, we feel convinced that we shall be found to be right in considering disease to be the main cause of the decay of human life, and that instead of being third on Dr. Pineo's list, it should have stood first. As the Ethnologist advances in knowledge, we may be able to gather from the savage some useful hints in surgery and medicine, applicable to the civilized, whether he be in the midst of civilization, or that of barbarism. On the other hand, as the Ethnologist becomes acquainted with the physical character and constitution of the savage, and the atmosphere, and other phenomena which surround him, we may be able to return the compliment and save him, if he is worth preserving, and the philanthropist says he is, and the emigrant begins to think so when he is deficient of white labourers, from utter extermination. Dr. Pineo's paper contained but little regarding disease, and we are therefore enabled to quote the whole in his own words. "It has often puzzled me to account for the strong scrofulous taint which exists among the New Zealanders; I believe Capt. Cook mentions an enlargement of the glands of the neck, but I attended soveral cases of the most deplorable and extensive ulceration, which exceeded any thing I have ever met with, either in the naval service, or in private practice. One was that of a man scarcely 30 years of age, all the branches of his family had been sober and moral; no taint had reached them, in any form, through Europeans. The ulceration extended from the acromion of the scapula of one shoulder, to that of the other, taking in the whole intervening space, and from 5 to 6 inches broad; several of the ribs were laid bare, and had partially fallen in. The application of a solution of the sulphate of copper, at first considerably diminished in size the sore surface, but it rapidly extended itself. In the village, which enjoyed a most healthy site, were several other afflicting cases of the same malady. It often attacks the lungs, and not unfrequently the spine. In other parts of the island I saw many with enlarged glands of the neck, particularly about the parotid; in one village, containing 100 souls, 30 died of the disease in the space of three years, and what was remarkable it generally attacked the strong and the hale. In England we usually look for this disease amongst the fair-haired, and clear,

and blooming complexioned people; and we should at first therefore be led to the conclusion that the dark ones had no legitimate title to such disease. Is the cause to be attributed to the nature of their food, which is most vegetable? I am aware many doubts arise in considering this question. Obesity is common among the natives of the Tonga Islands, where vegetable food is most abundant for the rich alluvial nature of the soil; the country being mostly flat."

Twenty-one names have been added to the list of members since the last meeting, including that of Lord Brougham, Mr. John George Shaw Lefevre, and Sir Isaac Lyon Goldsmid.

REVIEW.

Pulmonary Consumption; its Prevention and Cure, Established on New Views of the Pathology of the Disease. By Henry Gilbert, M.R.C.S.

It is a notorious but melancholy consideration that notwithstanding the exceeding prevalence and fatality of phthisis, the English plague, as it has been denominated, and notwithstanding the numerous monographs which have been published, we, as yet, know but little of those changes in the system, which lead to the formation and deposition of tubercle. We know not the ultimate source of the disease; any attempt, therefore, to elucidate the causes of this change is worthy of praise. The author, who, whether his views be correct or not, serves to direct attention to the etiology of consumption, by exciting controversy, even if himself in error, may be the means of eliciting valuable information. In this light we regard Mr. Gilbert's work, and are ready to award him due praise for his labours, without in the least degree pinning our faith to his dicta. His opinions are open to controversy, and, may be ultimately perhaps set aside by the result of a more accurate physiological and pathological examination; but, meanwhile they are deserving of a more full and cautious examination than we have space for.

Consumption, it is generally admitted, may be created, so to say, in a healthy constitution, in which its seeds have not been previously sown, by bad and innutritious diet, the constant want of proper clothing, residence in a close and crowded neighbourhood, breathing an impure air, loaded with the carbonic acid gas expelled from the lungs of other residents, and with the foul odours resulting from the continual decomposition of animal and vegetable matters; but there are cases continually occurring which cannot be traced to any of these causes,—consumption is as prevalent and fatal, *cæteris paribus*, among the high and noble, as among the poor and the outcast, the pariahs of society. Those who are not exposed to the deteriorating influences already enumerated, are yet liable to become phthisical from hereditary causes, and sink as rapidly when labouring under consumption, as the impoverished inhabitants of St. Giles, and Saffron Hill. It behoves physiologists therefore, to endeavour to ascertain what are the physical differences between a healthy and a phthisical subject: what peculiar condition of the system renders the one more liable to become consumptive than the other? To this Mr. Gilbert answers us that it consists primarily in a want of discriminating power in the mouths of the lacteals, whereby they are so far changed from their neutral state, as to admit those inorganizable parts, the residue of the materials of nutrition, which in their normal and healthy state they instinctively rejected. These inorganizable parts, which in a state of perfect health, ought to be expelled from the body, he says are absorbed from the alimentary canals through the lacteals, and conveyed by the thoracic duct to be circulated with the blood. Their deposition in the texture of the lungs gives rise to the formation of tubercles, and all the melancholy consequences attendant on this dreadful malady. If this matter be deposited in the lymphatic glands, the disease is then termed struma, while, if the mesenteric glands are the seat of this adventitious deposit, tabes mesenterica is the malady which is induced. These three diseases therefore have the same origin, and, although differing in symptoms and severity, may be considered as belonging to the same family.

We must acknowledge that Mr. Gilbert brings forward *plausible* arguments in its support. For these we must refer to the work itself. We think he has not sufficiently investigated and pointed out the cause of phthisis in its remotest bearing. If it be caused by a want of discriminating power in the mouths of the lacteals, what has induced that want of power? In other words, what is the morbid condition of the lacteals or of their mouths, by which they are deprived of the power of discriminating between that which is fit for the support of the system, and that which is positively noxious? The question we have now put is one, we are well aware, involving great physiological research, but it is also one eminently necessary before fixing the source of pulmonary consumption, as Mr. Gilbert does. We observe that he appears to attribute this to a congenital, or acquired atony of the nerves supplying the lacteal vessels, resulting either from hereditary causes, or from the continued or repeated influence of matter, coming in contact with the villi, which is unnatural to them. These are improper diet, injudicious use of medicine, inordinate indulgence in spirituous liquors, and excessive fasting. The indirect causes of the absorption of inorganizable matter, are, whatever circumstances may impair the process of digestion. Although the object has come thus far under Mr. Gilbert's notice, we still think it admits of further enquiry.

The principles developed by Mr. Gilbert, in his theory of the causes of consumption are applied by him to the prevention as well as the cure of that malady, the principal indications being by due attention, by hygienic and other means to the functions of nutrition, to prevent its being disturbed or disordered, and to remove from the patient all local exciting causes, which may determine the morbid movement to the pulmonary organs. When the complaint is established, the object must be to prevent the formation of new tubercles, and if possible to cause the disease to retrograde, by endeavouring to induce the disappearance of those already formed, without softening.

From the length to which this notice has already extended, we are unable to give an analysis of the plan laid down by Mr. Gilbert, for the prevention and treatment of this formidable disease, and must content ourselves with referring the reader to the work itself. Although addressed chiefly to the general reader, the medical practitioner will find in it many facts of importance, which may be of much service to him in the prophylactive and medical treatment of this intractable malady.

MEDICINE IN PERSIA.

The Persian Hakeems.—Hippocrates has never reigned in Persia, or, if he has, his family have woefully degenerated. Description fails in speaking of medical ignorance, and the natives have great respect for any talent in this way.

The Persians attribute all sickness to two causes—the excess of heat and cold; thus, if the patient suffers from the former, they bleed him, and for the latter they give cathartics. They will have it that every "Jerengee" must be a doctor: thus, I, who scarcely know a bolus from a plaister, was often called upon to prescribe for the fair sex; except bleeding a man once by giving him a knock on the head, when the nose gave up a copious stream, I do not recollect ever being called upon by the other sex. As to surgery in Persia, I should say that there is no such thing; their Mahomedan prejudices will not admit of dissection. The barbers may be deemed the only operators in such cases as bleeding, tongue-cutting, &c. The great principle on which they act is, that the disease must be cured by a remedy of an opposite nature; thus, for the heart-burn, they will keep a quantity of snow on the breast of the patient.

Sir John Malcolm relates a curious instance of their cure for blindness, which he himself experienced: "They fitted a large vessel full of snow. I was desired to place my face near it, a red hot stone was then thrown into the vessel, and the sudden dissolution of the snow caused a great perspiration, which was increased at the same time by a cloak being pulled over my head. The remedy, though very disagreeable, proved efficacious, and my sight was completely restored. This was imparted by the lady of a chief, in whose house I was a guest."

When they fail in their remedies, the "hakeem" resorts to their favourite doctrine of fatalism. He says: "when it is decided by God that a man is to die, no human aid can be of avail." For the ague, which is the most common complaint in Persia, and the most inveterate, (of which I can bear witness) they beat the patient most unmercifully; in which treatment they say they generally succeed. I did not submit to this process during the many months of my intermitting visitor. Precisely at noon every other day the attack came on; it was preceded by a numbness of the extremities, and then the shivering, during which I could not keep my saddle. I was rather inconvenienced by this happening on my journey. Immediately my carpet was laid on the ground, I was wrapped up in horse-cloths and cloaks, anything that offered to keep warmth in me, and this under a tropical sun. Some water was immediately heated, partaking of which, and laying thus for about an hour, I was then able to resume my journey. This merciless attack of quartan ague was at length conquered by Quinine.

The "hakeem bachis'" visits to the "harem kaneh" were sometimes of the most amusing description, as related to me by himself. In the long line of apartments the ladies laying on their mats, but well screened over, were waiting the doctor's approach, with their various rheums and catarrhs—all depending upon him to get rid of their grievances. This implicit confidence in the skill of the doctor helps very much towards the cure, and is universally entertained in Persia. Accompanied by the chief eunuch with numerous eunuchs guarding the way, the doctor stalks cautiously in, and nothing meets his eye but a series of hands poked out from under the screen, and covered each with a gauze glove; for his touch merely upon the clay beneath would be deemed pollution, but for this precaution. Then the titterings and laughings, the sobbings and sighings, many of the ladies feigning illness just to have a sight of the doctor, equally amused with himself at the passing scene.

Meantime order is kept by the dicipline of the eunuchs, which is very severe.

Some cases were bad, others frivolous. The doctor told me that in one case he must see the patient before he could prescribe, but the eunuch declared, " mimkum nist sahib"—it is impossible. Entreaty and remonstrance were in vain; the next day, on enquiry, the reply was, " moord ast"—she was dead. Thus was human life sacrificed by this bigotted national custom.

In former times the astrologers were often the only physicians, and they sought their remedy among the stars. But it so happened, that in one instance of a severe wound the shah grew worse under their celestial prescriptions. "Bejan shah"—" by the soul of the king," said he, " unless you instantly cure me of my disorder, I will have you cut up into mince meat." The doctor, alarmed at his peril, suddenly declared that the hot brains of a man instantly applied would prove efficacious. At that instant a Gholaum came in with some pressing intelligence, entreating permission to rub his forehead at the shah's threshhold; " knock him down" said the king " and apply the remedy." The poor wretch was prostrated and beheaded, the skull was emptied of its contents, and the hot brains applied to the king's wounds, with what success the historian does not say.

The late shah was very particular respecting his medicines; there was one purposely pre pared for the " king of kings," the principal ingredient of which was composed of *pearls*; these costly productions were pulverised and infused. The " Hakeem," my informant, did not tell me further respecting it, of its object or result, but that such was the favourite draught of the king, nor did I hear that this medecine though unprotected by patent, was likely to come into general use. Each one must be " Hakeem" in this country. I was once called to a patient long ill; he had been taking a quantity of medicine, but rather grew worse. I asked what he had taken. " Davau kali kourdan Sahib."—" I have eaten a quantity of pills." " Pills," I said, " where do you get pills in this country; has Morrison made his way into Persia." " We pick them up at the door," said he, " they are chicken's pills." He had in fact been swallowing a quantity of fowl's dung, which it cost me all my skill to eject. I did so, and the man was grateful with his " alhamdalilloh"—" praise be to God."—*From " Fowler's Three Years in Persia.*

PERISCOPE OF THE WEEK.

Case of Tic Doloureux treated with Tincture of Wild Hemp.—William Lynch, ætat. 40, a carriage maker, of intemperate habits up to three years since, states that on the 29th of July, 1841, whilst working in a thorough draught, he was suddenly seized with a most excruciating pain on the right side of the face near the ala of the nose, and from this part acute spasmodic pains shot up the right side of the face and head, together with spasmodic contractions of the muscles of the right side of the face. The sight of his right eye became much impaired. There was a copious flow of saliva. These paroxysms gradually increased till they occurred at least eight or ten times a day; loss of rest and strength ensued, which obliged him to give up his work altogether. He then placed himself under medical care, and has undergone all the usual treatment for this affection, with but very temporary relief.—Within the last few weeks his sufferings have been much aggravated by an attack of burning spasmodic pain in the ball of the left thumb, and from which spot severe shooting pains extend up the fore-arm. He has not known what natural rest is for a long time, and his countenance is expressive of much pain.—Wednesday, Jan. 17, 1843.—On this day he again sought relief at the Netterville Dispensary, and his case being considered one peculiarly favourable for a trial of the influence of the tincture of wild hemp as an anti-spasmodic, he was ordered gut. x. ter die.—Tuesday, January 24.—States that he feels himself considerably relieved under the new treatment; the spasmodic pains in the face and fore-arm have decreased both in severity and frequency; there is *a return of his natural sleep*. His appetite and looks are very much improved. The following effects he experiences after each dose of the medicine. In about ten minutes after taking the drops, a sensation of warmth about the region of the stomach sets in, together with a slight feeling of intoxication, which lasts for some time, and is followed by a strong inclination for sleep. His bowels, which have been of late obstinately constipated, are now sufficiently open, having a natural motion each morning; his appetite and strength are both improving, and his countenance is less expressive of pain and watchfulness. The sight of the right eye is somewhat clearer. In truth there was a remarkable relief obtained from this remedy in a case which had long resisted every other medicine.—Sir James Murray after stating this case to the Irish Surgical Society, further remarked, that he did not notice any lesion of the brain in post-mortem examinations, after cases of tic; but in the case of a noble marquis, he always found constitutional derangement of the stomach and bowels during a paroxysm of suffering. With respect to the ailment being constitutional, Lord A. was for twelve months after an amputation free from any pain, until accidentally having struck the stump against the post of a gate, which produced acute pain and exfoliation of a piece of the end of the bone, since which time he has suffered in a manner which all men deplore and would be glad to see relieved.—The extremity of the nerve on the stump of the noble marquis was sometimes irritable; a small ganglion had grown upon it, which it might be desirable to have excised. When Lord A. took violent exercise, as hard riding, irritation in the ganglion would ensue; no local remedy appeared to do any good, proving that the general constitutional irritation was the cause of keeping up the pain of the face. A remarkable circumstance occurred, showing the connection of irritation with disordered digestion. A small tumour or hard collection had formed in the caput cœci about the size of a pigeon's egg; the tumour remained there four or five years, and when it was expelled, it appeared like a hard ball of clay, and contained, as a nucleus, a few tea leaves, and a silvered mercurial pill. On inquiry it was found he had not taken a mercurial pill for five years before. Lord A. had considerable intervals of good health after being relieved from this concretion. Sir J. M. has observed other cases of tic connected with functional disease of the alimentary organs. When Lord A. was in a paroxysm of pain, his bowels were irritable, which prevented the internal use of croton oil, but he was frequently pustulated with that oil on the spine in the hope of giving relief.—Sir J. Murray, in reply to a question, further mentioned that in the case of Lord A., the ganglion is tender when pressed, but nothing in comparison with the pain in the face, and when he suffers from tic, the tongue becomes soft, white, large and impressed, or moulded with the marks of the teeth, showing that there is some considerable degree of constitutional ailment before, or simultaneously with, the paroxysms. No fault could be attributed to the amputation.

New Improvements in Photography.—Mr. Beard has at length succeeded in effecting a combination of art with science, in colouring the reflection in the camera, and not merely presenting a fixed shadow, but a perfect resemblance of the human face and form in all its tints and all its expression. The characteristic softness of the photographic likeness is preserved, while the colours impart to it a richness of effect similar to that of an elaborately finished miniature upon ivory, which, while it entirely obviates an objection that was made by some persons, to the mezzotinto-engraving-like effect, gives a finish to the portraits which renders them truly astonishing. This tonishing as well as the most delightful. This is not the only improvement recently effected; a series of scientific experiments have been carried on at Beard's establishment, which have elicited many felicitous results. A great saving of time has been made, and in the dullest weather a few seconds will suffice to obtain intensity of tone in the contrast of lights and shadows, that were not before obtainable without the aid of a powerful light; also, of controlling the action of light upon the plate, and preventing, by a too long exposure in the camera, the production of a negative picture, or the lights and shadows reversed, which has been long a desideratum under so changeable a sky, so that the process is now rendered much less uncertain than formerly, and a good picture cannot fail to be most astonishingly quick and certainly produced; and when one good one with a happy expression &c., is obtained, it can be multiplied to any extent without in the slightest degree injuring the original. Very shortly we are told, will be brought out another application of the Daguerreotype to the fine arts, by etching the picture produced into the plate sufficiently deep to enable us to print a great many copies from it, and as it may be reversed in the camera, there will be a saving of much time and labour in the engraving of plates, for which we are indebted to the efforts of Messrs. Johnson and Woolcott, by whom the Daguerreotype invention was first made applicable to portraiture not reversed in the reflecting camera.

The Mucous Membranes.—We next come to the mucous membranes, the anatomical and physiological account of which we shall pass over for obvious reasons, and proceed to the pathological phenomena of this system, so far as it is an organ of secretion, or rather a system of secreting organs. Considered as such, the quantity of the secretion may first be at fault; it may be too copious, it may be too small, it may cease altogether. In the second place the quality of the secretion may deviate from that which is natural, and in the third place, new organs may form for secretion in mucous membranes, or the relations of the parts of which mucous membranes consist may be so changed as to give the semblance of a new formation, the external appearance of the same assuming an unusual form.—The chief end of the secretion of the mucous membrane is obviously not the purification of the blood, nor the formation of a specific matter, nor the evacuation of any residue of parts which have reached the interior, but do not correspond to the purposes of life, but a sort of protection, which the mucous membrane finds necessary to its special destination as a mediating organ between the external world and the internal organism. The mucus accordingly compensates it for the want of the horny structure, which protects the skin, or it has it for the same purpose which this has for the skin. Only in

some parts of this system, in the bronchial ramifications and the stomach especially, matters are somewhat otherwise, but then the secretion does not consist of mere mucus, and entirely different circumstances occur through the disturbance of the secretions, which appertain to the mucous system as such. Nay, we shall convince ourselves that the diseases of the stomach, bronchial system, and uterus, which depend on mere change of the mucous secretion, are of an entirely different nature and import from those which concern the proper secretions of these organs. — The quantity of the secretion of the mucous membrane is very unequal in the different periods of the life of man, and in certain individuals. In infants it is rather copious. In a subsequent period of childhood the mucous secretion is always more scanty, until a few years after the commencement of puberty it attains its minimum, whence there is at this age a greater disposition to hæmorrhages from the mucous membranes, simply because these are less protected than usual from the impressions of the atmosphere. At a later age they again gradually, but slowly, become more copious, till at a more advanced period they increase considerably, especially in the genito-urinary parts of the system, where they give rise to catarrhus vesicæ. So it occurs with the generality of persons, but there are many exceptions, in which the mucous secretion continues copious during the entire life. Not rarely have the temperaments of individuals been determined by these differences; thus, a man with copious mucous secretion has been called phlegmatic, one with a very small quantity, melancholic, a mischievous error no doubt, but the natural consequence of the vacillating import attached to the term temperament.— It is morbidly diminished by two entirely opposite causes, viz. by increased contraction in the vessels of the mucous membranes and inflammation of the same, also by increased expansion. The first cause produces the natural diminution of the secretion in the adult age. The child's body is more relaxed than that of the adult; expansion predominates over contraction, and so it then happens that the secretion of the mucous membranes decreases with increasing maturity, in which the quality of contraction always gains the upper hand. At a more advanced period the imperfection of the process of oscillation and the diminished capability to assimilate that which comes from without, act so that those secretions increase which compensate for the diminished serous secretions, which are considerably lessened by age, and in this way we may account for the increase of the mucous secretions which then occurs. The increased contraction of the vessels of the mucous membrane also produces a dryness of the same, for want of juices and of supply. But the mucous secretion in the membranes does not entirely cease, if they are inflamed: the stoppage of the exchange of matter in the minute vessels then renders all secretion impossible. If the inflammation be shared with the cellular membrane, by which the mucous membrane is connected with the subjacent parts, it dies and then presents a thick, white, wrinkled mass, which gradually detaches itself. The mucous membrane does not pass into suppuration, but it sometimes becomes covered with pus, viz. when the inflammation becomes superficial. Then one of two things may happen; either the membrane, at first entirely dry, presents places, which altogether resemble excoriations of the skin, which are covered with a little thin pus, or it resumes again the office of secretion, but after an entirely different manner from before; instead of mucus it secretes plastic lymph. The mucous membrane can, in fact, suppurate onle when ulcers form in the subjacent parts; thes perforate it. Hence we never see, for instance, syphilitic ulcers in the urethra or vagina. But they are of frequent occurrence in the mouth and throat with destruction of the mucous membrane, but never in the same membrane, but in the muscular or glandular structures lying beneath.—Increase of the mucous secretion occurs much more frequently than its diminution; it is the necessary consequence of every irritant which produces congestion of blood in the minute vessels of the mucous membranes. And so acts almost every irritant, at least at the commencement; for though the mucous membrane is accustomed to the contact of external matters, yet by their constant action and greater change their influence must be felt quite differently, and accordingly produce on the action of their vessels as important and frequent changes as in their nervous action. Thus life manifests itself variously at various periods in the mucous membranes, consequently the influx of blood into their vessels, from which their dilatation follows, is constantly subject to increase and diminution. The first have an increase of secretion as a natural consequence. Cold produces such an increase, most rapidly even in the parts of the mucous membrane most exposed to it, in the nose, eyes, throat, and air-passages. Every one who goes into the cold will soon perceive this, by the moisture of his nose; the discharge which the cold produces, and the moist state of his eye, prove it. Cold also produces mucous secretion in the throat, witness the coldness of ice in Summer; it does less injury in the stomach, and in the intestines also, in which cold injections are often beneficial. But throughout the entire genito-urinary system of mucous membranes, cold will not only prove very serviceable, but will even check the profuse mucous secretion, when it arises from other causes. Cold acts on the bladder, the genitals, and even on the stomach itself as a very violent, unaccustomed stimulus on the sensible nervous surfaces, and its action on the vascular net-work of the mucous membranes does not promote the secretion; it rather exalts the entire vitality of the organ. On the contrary, in the air-passages and the eyes, it is a usual stimulus, which affects the nervous action less, and excites the secretion much more.—[From an able abstract of Dr. Neumann's work on Pathology in the *Medico-Chirurgical Review* for April.]

Dr. Payerne's Patent for Purifying Air.—An abstract of this patent appears in the "Mechanics' Magazine; it is granted to W. R. Vigers, Esq., of Russell Square, on behalf of Dr. Payerne, "for a mode of keeping the air in confined places in a pure or respirable state, to enable persons to remain or work under water and other places without a constant supply of fresh atmospheric air."—The first thing claimed and specified is the depriving the atmosphere in confined places of the carbonic acid gas which it contains, produced from respiration or combustion, by means of quick lime and caustic alkali, or of the lime alone, which is to be dissolved in eight times its weight of water. The air in the apartment is to be passed through this caustic solution by a pair of bellows, the nozzle of which reaches nearly to the bottom of the vessel containing the lime and water. The vitiated air thus coming in contact with the lime, the carbonic acid gas is absorbed. It is calculated that one cubic foot of atmospheric air must be purified for each person per minute.—2. The patentee claims the restoring the requisite quantity of oxygen, to supply the place of that consumed; which oxygen is to be procured from the chloride of potash, or driven off from the peroxide of manganese by means of heat, into the apartment, or allowed to escape from vessels into which it may have been previously compressed.—3. The patentee claims further, the purification of the air contained in the diving bell, by the process described in claim 1, and the restoring the requisite proportion of oxygen from a vessel attached to the diving-bell, into which the oxygen had been previously compressed; also the allowing the escape of atmospheric air, which had previously been compressed several atmospheres, into two compartments, one of which is situated at each end of a diving-bell, somewhat resembling a boat inverted, the centre one being occupied by the diver or workmen, who may, by means of stop-cocks, regulate the supply according to their wants.—The specification is of extraordinary length, filling no less than ten skins of parchment, but the above extract contains all that is material in it.

Mischief of Tea.—In almost all cases of protracted dyspepsia, says Dr. James Johnson in his Review, especially when there is what is called a craving at the stomach, in hysterical weakness, nervous palpitations of the heart, &c., the common practice of taking large quantities of hot tea, generally twice a day, is certainly very injurious. There is, however, no set of cases in which it is altogether so hurtful as in those anomalous complaints, paralytic and neuralgic, of the nervous system, that are so common in unmarried females. We have repeatedly observed that the mere discontinuance of this favourite beverage of such patients—some of them live almost entirely upon their tea—has been attended with immediate henefit. The use of coffee—infused and filtered, not boiled—or weak cocoa, should be substituted in place of the trashy hot liquor that young ladies are usually so fond of. We verily believe that the use of tea has produced almost as much illness in this country as the opium, which we are so unjustly forcing upon poor John Chinaman, has among the subjects of the Celestial Empire.

Composition of Nervous Matter.—The discovery of phosphorous, as an element of the mass of the brain is due to Vanquelin; and, according to his analysis, it contains 1.5 per cent. of phosphorus. This statement has been verified by many subsequent observers, especially by Couerbe, and more recently by Fremy; according to the latter, the nervous matter consists of albumen seven, fat five, water eighty-eight. The cerebral fat is a mixture of olein, margarin, oleic, and margaric acids, with cholesterine, oleo—phosphoric, and cerebric acids, the latter being wholly or partly combined with soda. The oleo—phosphoric acid is, by boiling, resolved into oleine and phosphoric acid: the cerebric acid is composed of carbon 66.7, hydrogen 10.6, nitrogen 2.3, oxygen 19.5, phosphorus 0.9.

New Systems.—Many persons in the present day, says Lisfranc, with the view of appearing men of genius, pretend that it is quite necessary to re-construct the edifice of science from its very foundation. Setting themselves to work, they begin to divide, sub-divide, and multiply diseases without end; and they assign to each of the multitude, distinctive characters and physiognomies—which, according to them, may be readily recognised, but which in truth are utterly fallacious. These are most pernicious errors, which cause science to retrograde, instead of making any sure advances.

Mammary Tumous.—M. Lisfranc is of opinion, that the universal use of stiff corsets by women, in France and other countries, has much increased the frequency of mammary tumours.

DRUG PRICE LIST FOR THE PRESENT WEEK.

DRUGS.	PRICE. £ s. d.	£ s. d.
Alkanet Root, bd. ......cwt.	0 14 0	to 0 16 0
Aloes, Barbadoes	5 0 0	16 10 0
Epatica, bd.	1 10 0	10 0 0
Cape, bd.	1 10 0	2 0 0
Alum, British........ ....ton	10 10 0	11 0 0
Roch. ....cwt.	1 3 0	0 0 0
Ambergris, Grey.........oz.	0 1 6	0 5 0
Anchovies..........dhle. brl.	1 4 0	0 0 0
Angelica Root ....dpcwt.	1 0 0	1 15 0
Annatto, Flag, dp.........lb.	0 0 6	0 0 8
Roll ....dp.	0 0 5	0 0 8
Antimony, Crude........cwt.	1 15 0	2 0 0
Ore, bd. ......ton	17 0 0	20 0 0
Regulus Cps. cwt.	2 10 0	3 10 0
Bowls	0 0 0	0 0 0
Arrow Root................	0 0 5	0 1 4
Arsenic, White. ....cwt.	0 0 0	0 0 0
Red	2 7 0	2 10 0
English White......	0 14 0	1 0 0
Yellow.....	1 12 0	0 0 0
Boracic Acid............cwt.	2 2 0	0 0 0
Balsam, Canada ....lb.	0 1 0	0 1 2
Capavi, bd..........	0 0 10	0 1 3
Peru, bd.......... :	0 0 0	0 0 0
Tolu, bd............	0 1 4	0 2 2
Bark, Peruvian, bd. pale..lb.	0 0 6	0 0 10
Good	0 2 3	0 2 9
Mid. do.....	0 1 3	0 1 0
Crown......	0 0 9	0 3 0
Yellow, Flat	0 2 9	0 4 4
Quill	0 0 0	0 0 0
Red, Flat	0 3 6	0 6 0
Quill........	0 1 0	0 2 0
Cascarilla, bd. ....cwt.	1 0 0	1 10 0
Quercitron ....dp.	0 7 0	0 12 0
Oak English...per load	15 10 0	18 0 0
Foreign ... per ton	5 0 0	8 0 0
New S. W........	0 0 0	0 0 0
Berries, Bay............cwt.	1 5 0	1 6 0
Juniper, Italian	0 9 6	0 10 6
German....	0 10 6	0 13 0
Turkey, Yellow	2 5 0	3 0 0
Persian, do.	7 0 0	11 10 0
Black Lead, E. I.........cwt.	0 6 0	0 7 0
Malaga.....	0 10 0	0 18 0
German	0 12 0	0 18 0
Dust	0 0 0	0 0 0
Borax, or Tincal, bd.....cwt.	1 12 0	2 0 0
E. I. Refined, bd.....	2 5 0	2 10 0
English Refined......	3 5 0	0 0 0
Brimstone, Rgh. bd......ton	6 0 0	6 10 0
Roll	9 10 0	10 10 0
Camphor, Unrefined ....cwt.	10 0 0	0 0 0
Dutch, bd.....cwt.	10 0 0	0 0 0
Refined........lb.	0 3 5	0 0 0
Cantharides, bd............	0 2 0	0 2 6
Capers, French ....cwt.	4 0 0	9 10 0
Capotts	0 0 0	0 0 0
Cardemoms, Malahar, bd..lb.	0 2 2	0 3 0
Long Longs	0 1 8	0 2 0
Ceylon	0 1 0	0 1 2
Castor, America..........lb.	0 19 0	1 5 0
Castor Oil, America ......lb.	0 0 4	0 0 7
E. I. bd.	0 0 4	0 0 8
Chillies, E. I. bd........cwt.	0 0 0	0 0 0
China Root, hd..........cwt.	2 0 0	2 8 0
Cobalt, bd................lb.	0 0 0	0 0 0
Coculus Indicus, bd. ....cwt.	0 9 6	0 14 0

DRUGS, &c. continued,—	PRICE. £ s. d.	£ s. d.
Colocynth, Turkey .....dplb.	0 2 0	to 0 3 3
Spanish	0 1 4	0 1 9
Colombo Root, bd.......cwt.	0 15 0	1 0 0
Copperas, Gr. on bd. ....ton	4 15 0	0 0 0
Blue	1 17 0	2 0 0
Cream Tartar, d.p. Fr...cwt.	0 0 0	0 0 0
Venetian	2 14 0	3 4 0
Cubebs, bd. ....cwt.	2 15 0	3 0 0
Cowries	2 16 0	3 0 0
Dragon's Blood, bd..........	2 10 0	6 0 0
Reed..............	7 5 0	20 0 0
Emery Stone................	9 10 0	11 0 0
Essential Oils,		
Cloves, bd......lb.	0 7 0	0 10 0
Carraway, dp.	0 8 9	0 9 0
Lavender..........	0 7 6	0 8 0
Peppermint, bd....	0 8 0	0 9 0
Spike	0 4 0	0 0 0
Anniseed, bd. ..lb.	0 6 6	0 0 0
Cassia, bd.........	0 7 6	0 8 0
Cajaputa, bd. ..oz.	0 0 1	0 0 3
Cinnamon, bd.....	0 2 3	0 3 6
Mace (expd.) bd..	0 0 2	0 0 3
Nutmegs, bd......	0 0 9	0 0 11
Bergamot, dp...lb.	0 10 0	0 0 0
Lemon	0 5 0	0 0 0
Orange	0 4 6	0 5 6
Rosemary	0 1 8	0 2 6
Thyme	0 1 9	0 3 0
Otto Roses oz.....	0 10 0	0 10 9
Almonds	0 1 7	0 1 11
Galangal Root, bd......cwt.	0 12 0	0 14 6
Galls, in sorts ....cwt.	2 1 0	2 10 0
Green or White	2 0 0	2 10 0
Blue	2 14 0	3 2 0
E. I. Blue, bd.	2 10 0	3 0 0
Gentian Root, bd........cwt.	0 18 0	1 5 0
Glue, Best Town........cwt.	2 12 0	2 14 0
Inferior	2 0 0	2 8 0
Foreign	0 0 0	0 0 0
Guinea Grains, bd...........	2 6 0	2 15 0
Gums,		
Ammoniac, Lp. bd. cwt.	0 0 0	0 0 0
Drop......	0 0 0	0 0 0
Arabic, E. I. bd.......	1 10 0	3 10 0
Cape	0 10 0	0 16 0
Turkey, fine ..	8 0 0	9 17 6
2nds and 3rds	4 5 0	7 0 0
Barbary, Brown, bd ..	2 0 0	3 0 0
White.	4 10 0	5 0 0
Gedda, bd............	3 5 0	0 0 0
Animi, washed, bd	4 0 0	6 0 0
scraped..............	6 10 0	9 10 0
Copal.................lb.	0 0 6	0 4 0
Assafœtida, hd..........cwt.	1·10 0	4 4 0
Benjamin, 3rds, bd..........	4 0 0	10 10 0
1st and 2nds......	15 0 0	50 0 0
Gamboge, bd. .... :....	14 0 0	21 0 0
Galbanum...................	3 10 0	4 10 0
Guiacum..................lb.	0 0 4	0 2 0
Myrrh, E. I. bd.........cwt.	3 10 0	11 0 0
Turkey............	0 0 0	0 0 0
Mastic...................lb.	0 2 10	0 4 6
Olibanum, bd. ....cwt.	1 6 0	2 5 0
Sandrack, bd..............	3 5 0	3 10 0

DRUGS, &c., continued,—	PRICE. £ s. d.	£ s. d.
Senegal, garbled, bd.........	4 0 0	4 5 0
Tragacanth, Picked	14 0 0	15 0 0
Sorts	5 0 0	8 10 0
Seedlac............cwt.	9 15 0	1 4 6
Lac, Sticklac, Bengal........	0 17 0	1 5 0
Siam, &c......	1 10 0	2 0 0
Shellac, Liver......cwt.	2 4 0	2 5 0
DT............	2 5 0	2 10 0
Orange........	2 16 0	3 15 0
Block	1 15 0	2 0 0
Hellebore Root ....cwt.	2 0 0	2 10 0
Honey, Fine	2 10 0	5 0 0
Iceland Moss ....cwt.	0 0 2	0 0 3
India Rubber, solid	0 0 3	0 0 8
bottles........	0 0 8	0 1 0
small	0 1 6	0 1 9
Ipecacuanha, bd..........lb.	0 0 11	0 1 3
Isinglass Leaf, 1st sort......	0 10 0	0 11 0
2nd sort......	0 9 0	0 10 0
Simovia	0 2 6	0 3 0
Siberia Purse	0 5 0	0 6 0
Short Staple, 1st......	0 8 0	0 11 6
Long ditto............	0 10 0	0 11 0
Isinglass, Brazil	0 1 0	0 5 6
Jalap, bd..................lb.	0 2 2	0 2 4
Juice of Lemon...........gal.	0 2 0	0 0 0
Liquorice, Ital. d.p. ....cwt.	4 15 0	5 15 0
Root, dry, bd.......	1 0 0	1 5 0
Magnesia, English..........	3 15 0	0 0 0
Manna, Flakey, bd........lb.	0 0 8	0 3 4
Sicily, bd...........	0 0 10	0 1 8
Musk, good and fine, bd..oz.	1 10 0	2 16 0
Nux Vomicæ, bd........cwt.	0 7 0	0 17 0
Olives, French half-brls 12 gls	3 0 0	4 10 0
Spanish......keg 2 gls	0 9 0	0 10 0
Opium, Turkey, hd........lb.	0 9 0	0 10 0
Egyptian	0 0 0	0 0 0
Orchella, Can.............ton	0 0 0	0 0 0
Cape de Verd	0 0 0	0 0 0
Madeira	50 0 0	0 0 0
Orpiment, E. India, bd......	0 0 0	0 0 0
Orange Flower Water	0 0 8	0 1 0
Peel ....cwt.	1 16 0	0 0 0
Orris Root, d. p. ....cwt.	1 0 0	2 13 0
Pellitory Root............lb.	0 1 0	0 1 0
Pink, Root...............lb.	0 0 10	0 1 4
Pitch, Burgundy........cwt.	0 10 0	0 15 0
Pumice Stone, sorts......ton	6 0 0	7 0 0
Quassia .... cwt.	1 7 6	1 10 0
Quicksilver	0 4 0	0 0 0
Rhubarb, round, bd. ......lb.	0 3 6	0 4 9
flat	0 3 0	0 5 0
Dutch, trimd......	0 4 6	0 6 0
Russia............	0 11 0	0 12 0
Saccharum Saturne, bd....lb.	0 0 5	0 0 0
Saffron, Spanish ....lb.	1 15 0	1 17 0
Sago, common, bd.......cwt.	0 8 0	0 10 0
Pearl .... :....	0 9 0	1 1 0
Sal Ammoniac, E. I. bd. cwt.	2 0 0	2 2 0
English, Refined....cwt.	2 4 0	2 6 0
Salts, Glauber	0 7 0	0 0 0
Epsom	0 12 0	0 12 6
Salep ....cwt.	5 10 0	6 0 0

DRUGS, &c., continued,—	PRICE. £ s. d.	£ s. d.
Sarsaparilla, Bra. bd. .. lb.	0 0 10	to 0 1 8
Honduras bd. ..	0 0 10	0 1 6
Vera Cruz, bd...	0 0 0	0 0 0
Jamaica, bd. ..	0 1 0	0 2 0
Sassafras Root.. .. .. ton	7 0 0	8 0 0
Scammony, Smyrna .. lb	0 0 0	0 0 0
Aleppo, 2nds, bd..	0 8 0	0 15 0
fine	0 18 0	1 5 0
Seeds, Anni .. .. ..cwt.	0 0 0	0 0 0
German, duty paid ..	1 5 0	1 15 0
E. I. Star, bd.	3 4 0	3 10 0
Cummin, bd... ..cwt.	1 0 0	1 5 0
Carraway, For. bd. ..	1 3 0	1 10 0
Seneka Root, bd. .. .. lb.	0 0 9	0 2 2
Senna, Alexandria .. .. lb.	0 0 11	0 1 2
Smyrna	0 0 9	0 1 6
East India, hd... ..	0 0 5	0 0 8
Tinnevelly	0 1 8	0 2 3
Smalts, Saxon, FFFE .. lb.	0 0 0	0 0 0
Danish, do.	0 1 6	0 1 7
Other sorts in	proportion	
Snake Root, bd.. .. .. lb.	0 10 0	0 1 4
Soap, Naples, soft	0 1 6	0 1 9
Castile, hard.. ..cwt.	2 12 0	2 15 0
Soy, bd. .. .. .. gallon	0 5 9	0 6 6
Sponge, fine .. .. .. lb.	0 14 0	1 0 0
ordinary	0 3 0	0 11 0
Sulphate of Quinine .. oz.	0 7 6	0 8 0
Squills, dry .. .. .. lb.	0 0 1	0 0 2
undried	0 0 0	0 0 0
Spermaceti .. .. .. lb.	0 1 9	0 1 10
Tamarinds, W. I. .. ..cwt.	1 8 0	3 10 0
E. I. bd.	0 0 0	0 0 0
Tapioca, bd. .. .. .. lb.	0 0 4	0 0 9
Turmeric, bd. Bengal ..cwt.	0 14 0	0 16 0
Java	0 12 0	0 15 0
Java, green ..	0 7 0	0 10 0
China..	1 0 0	1 8 0
Terra Japonica, black	0 12 0	0 13 6
Pale in squares	0 16 0	0 17 6
De Sienna	0 0 0	0 0 0
Valonia Smyrna .. .. ton	12 0 0	17 0 0
Picked Morea	13 0 0	16 0 0
Vinelloes, Brazil, bd. .. lb.	0 10 0	0 11 0
Vera Cruz	3 0 0	4 0 0
Verdigrease, For. D. P... ..	0 1 2	0 1 3
English	0 1 3	0 0 0
Vermillion, China, bd. .. lb.	0 5 0	0 5 6
English	0 5 0	0 5 4
Vitriol, blue .. .. ..cwt.	1 16 0	1 17 0
Foreign, white	0 16 0	0 17 0
English, do.	1 4 0	1 5 0
Oil of .. .. .. lb.	0 0 1	0 0 0
Wax, Mogadore, bd.. ..cwt.	6 10 0	7 15 0
American, d.p.	7 10 0	8 0 0
Russian, d.p.	9 0 0	9 5 0
Hambro' d.p.	8 10 0	9 0 0
East India, d.p.	7 0 0	8 10 0
African, d.p.	7 10 0	8 0 0
White Hambro'	9 15 0	10 10 0
English .. .. ..cwt.	9 10 0	9 15 0
Cape	7 10 0	9 10 0
Weld, English .. .. ..load	0 0 0	0 0 0
Woad .. .. ton	0 0 0	0 0 0
Wood, Sapan Bimas, bd. . ..	10 0 0	13 10 0
Siam..	6 0 0	8 0 0

Phosphatic Deposits in the Urine.—It was long ago remarked by Berzelius, that phosphatic deposits were often present in the urine passed in one part of the day, and absent in other specimens. A series of cases where the triple phosphate existed in the urine, were carefully watched by Dr. Golding Bird, with a view to determine the accuracy of this statement, and the following is the result of his observations:—That where the presence of deposits of phosphates is independent of the irritation of calculus or of organic disease, it is most abundant in the urine passed in the evening (urine of digestion), and absent or replaced by uric acid, or urates, in the morning urine (urine of the blood), the urine being always of a tolerably natural color, never below, and often above, the mean density. Where the presence of phosphotic salt depends on the irritation of a calculus, or of organic mischief in the urinary passages, the urine is pale and whey-like; of a density below the average, often considerably so, and the earthy deposit is nearly equally abundant in the night and morning urine.

Source of the Phosphates in the Urine.—One of the sources of the phosphates pointed out by Liebig, was propounded and illustrated by Dr. Prout, long before Liebig's work appeared, to depend on the destructive or secondary assimilation of nervous matter in which phosphorus enters as a component. As the nervous mass must, in common with other tissues of the body, be daily and hourly undergoing a change, fresh matter being deposited and the old absorbed, during which process its particles undergo a secondary assimilation or metamorphosis, phosphoric acid is generated, and, combining with bases, escapes in the urine.

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(Signed) "C. H. WILKINSON, M.D."

"Dated October 23rd, 1840."

To Mr. C. DINNEFORD, Bond-street, London.

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From the "Medico-Chirurgical Review" for January, edited by Dr. James Johnson, M.D., Physician Extraordinary to his late Majesty King William the Fourth:—

CEYLON MOSS.—Mr. Previte has contrived to convert this nutritious substance into several agreeable forms, to suit the tastes and appetites of invalids. We have been trying and prescribing the jellies of late, and can speak strongly in their favour. This will prove a valuable dietetic article in the sick-room.

Sir—I can have no hesitation in speaking in the most satisfactory manner of the jelly prepared from your Ceylon Moss, for I have been in the continual habit of prescribing it as a diet for convalescents ever since I first heard of it; and I can with truth say that I know no better food in such cases.—Sir, your obedient servant,

(Signed) J. R. MARTIN, Presidency Surgeon.

Calcutta, December 8, 1836.

December 14, 1836.

Sir—In reply to your note, I beg leave to state that I have for many years past been in the habit of recommending the Ceylon Moss, as prepared by you, to all my convalescent patients; and a great majority of them have preferred it to any other, either vegetable or animal jelly.

(Signed) S. NICHOLSON, Surgeon, General Hospital.

To Mr. Previte.

I have used the Ceylon Moss frequently as an article of nourishment for invalids and children, and find it answer every purpose of arrow-root or sago; and in most cases to be much more agreeable to the habits of a sick person than the other descriptions of farinaceous food generally in use. (Signed) A. R. JACKSON, M.D., Surgeon Officiating Apothecary, H.C.S.

H. C. Dispensary, Dec. 13, 1836.

I have much pleasure in giving testimony in behalf of Mr. Previte's Ceylon Moss. It is an admirable article of food, peculiarly well adapted to the delicate stomach of an invalid; light and easy of digestion, it is at the same time very nutrititious; far superior indeed to anything of the kind I ever met with. I have employed it extensively, and can recommend it with confidence.

(Signed) W. H. GOODEVE, M.D.
Professor of Anatomy and Medicine, Medical College.

Calcutta, December 15, 1836.

Fort William, December 13, 1836.

Dear Sir—I have examined and tried the Ceylon Moss, and am of opinion that it is a valuable article of sick diet; the more so in cases where animal jelly cannot be obtained without delay, and when it is not so fitting for a weak state of the stomach as that of the Ceylon Moss.—Very truly yours,

(Signed) FREDERICK CORBYN, Garrison Surgeon.

To Mr. Previte.

Calcutta, December 13, 1836.

Sir—In reply to your note, in which you request my opinion upon your Ceylon Moss, I can merely repeat what I said in my capacity as editor of the "Indian Journal of Medical Science," viz.—that I have tried it myself, and found it unequalled as a light and nourishing food for the sick. I beg to apologise for not having sent this reply earlier.—I remain, Sir, yours obediently,

(Signed) J. T. PEARSON, M.D., H. C. Service.

To Mr. Previte.

I hereby certify that I have made extensive trials of the Ceylon Moss, introduced into notice by Mr. Previte; and I have also subjected it to chemical analysis. For details as to its chemical properties, I may refer to my paper on the subject in the "India Journal of Medical Science." I need only repeat here that I consider it an excellent article of diet for invalids. It is very nutritive, easy of digestion, and free from any disagreeable or prejudicial qualities.

(Signed) W. B. O'SHAUGHNESSY, Professor of Chemistry, December 10, 1830. Medical College, Calcutta.

I have had many opportunities of recommending the Ceylon Moss, as prepared by Mr. Previte, in cases of extreme debility, and in early convalescence after fever, dysentry, and other complaints, where none other than the most delicate nourishment could be administered; and I can confidently bear testimony to its value as a light and grateful article of food under such circumstances.

(Signed) WALTER RALEIGH, Surgeon.

Calcutta, General Hospital, December 8, 1836.

(These certificates are taken from a paper furnished by me in 1837, and published in the "Transactions of the Royal Medico-Botanical Society." Vol. I., Part 4, p. 181.)

FROM THE INDIA JOURNAL OF MEDICAL & PHYSICAL SCIENCE:

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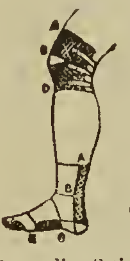

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 186. Vol. VIII. LONDON, SATURDAY, APRIL 15, 1843. PRICE FOURPENCE. STAMPED EDITION, 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY,

Delivered by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S, L & E., &c. &c. at the Royal Institution.

LECTURE II.

[Mr. Brande commenced his second lecture by a recapitulation of that part of his first discourse which related to the means of determining the weight of water produced in certain analytic operations, and by pointing out the important bearings of such processes upon the determination of the quantity of hydrogen contained in organic products. He then shewed the increase of weight which the oil of vitriol counterpoised in the balance in the last lecture had sustained during a week's exposure, and found the five hundred grains—its original weight—increased to eight hundred and forty. He then proceeded as follows :—]

Of course if, instead of exposing the oil of vitriol to the open air, I had exposed it to a certain quantity of confined air, I should then have only abstracted the quantity of moisture that might have been contained in such limited portion of air at the time of the experiment, and by such a proceeding I should have rendered that portion of air perfectly *dry ;* I should have deprived it of all humidity; and might in this way determine (as well as by Daniell's hygrometer) the quantity of watery vapour existing in the air under examination.

But we must look at these and similar methods a little more closely, as I shall afterwards have occasion to give a number of analytical details in which they bear an important part, and before we proceed upon our proposed examination of carbon, I will show you how to determine the quantity of water taken up under any particular circumstances.

I have here a tube containing some pumice imbued with oil of vitriol. A piece of pumice stone soaked in oil of vitriol becomes like a sponge —a kind of stony sponge, its pores being filled with the acid ; you may imagine it thus presents a very great surface, as it were, and it is on that account an excellent material for absorbing, under such circumstances, the moisture that may be contained in the air. Well, then, in this tube there is a quantity of pumice stone that has been so wetted with oil of vitriol, and has been counterpoised upon the balance ; and now, if I breathe through the tube for only a few minutes, it will increase very considerably in weight. Now, suppose I wanted to determine the quantity of water so given off by my lungs, in any given time ; I have only to breathe quietly though this tube, and the air from my lungs, which goes in moist, will come out perfectly dry, and then the increase in weight determined by the balance gives the quantity of water thus evolved. Now, suppose the question be not what quantity of water has been given off, but what quantity of *hydrogen* has been thus evolved ? I have only to calculate the quantity of water taken up, and then every nine grains of water which the pumice sponge has acquired, indicates *one* grain of hydrogen.

I will now shew you the use of another hygrometric substance, which is constantly employed in the laboratory—namely, *chloride of calcium*—it must be fused and broken up into little bits, and in that form it has a very strong affinity indeed for water ; so that, if I expose it only for a few minutes it will be increased in weight, in consequence of taking up water from the air. Well, having broken up the chloride of calcium into small pieces, I will now put it still warm and with proper precaution into this tube and counterpoise it in the balance, and having done so I will pass some moist air over it, which I can do by attaching it to this apparatus.

[The apparatus consisted of a two-necked bottle, so arranged that moist air might be propelled through the tube.]

And now I find, by again carefully weighing the tube and its contents, that the chloride of calcium has increased in weight ; and if I go through the operation minutely, I shall find, as I do now, that it has increased as nearly as possible two grains and six tenths, or a little more. Now, out of these two grains and six tenths, one in every nine parts is hydrogen, and, supposing I wanted to determine not what quantity of water, but what quantity of *hydrogen* has been produced, I have only to take one-ninth of the water. Now, whenever I want to determine the quantity of hydrogen in any organic body, I must convert it, by means which you will see by and bye, into water. It is very difficult to determine minute quantities of hydrogen in any other way, but it can be done with considerable accuracy in this way. By a very simple modification of this experiment, it is easy to determine the quantity of water produced in a variety of cases, but more especially during the combustion of our common sources of light.

For instance, here is a gas burner which is burning a quantity of hydrogen, and therefore producing a considerable quantity of water, and you are probably aware, that if you burn gas lights in a room the atmosphere becomes very humid ; this arises from the water produced by the burning of the hydrogen. If I take a clean glass and hold it over a flame, it becomes dimmed by the moisture, and if we keep the glass cool the water will begin to run down and dribble away in considerable quantity ; and the only reason why we do not observe it in the common lamp glass is, that it is too hot to condense the vapour, and therefore it is mixed up with the air. I have here a bottle of water, which was collected in a few nights from the gas lamps of the Athenæum Club; it is not very pure, but contains sulphuric acid, iron, and copper. Now wherever gas is burned it contributes to enlarge the amount of ærial moisture, and the quantity of water thus formed, to say nothing of the matters arising out of the impurities of the gas furnished by the London companies, and which contaminate this water and render it mischievous—is often very inconvenient, especially in reference to its condensation upon the insides of windows and other cool surfaces.

So much, then, for the water in the air, the means of determining its quantity, and the methods by which we consequently infer the quantity of hydrogen contained in any substances which admit of being burned.

Now as respects *carbonic acid*, which I have already adverted to as one of the constant but variable ingredients in this atmosphere of ours, and of which the average quantity contained in the air amounts to about one part in a thousand. You will first probably ask me to explain a little more particularly what carbonic acid is, and how we detect it. It may very easily be detected by lime-water, or by baryta-water, both of which furnish valuable means of ascertaining the presence of carbonic acid. I must now shew you that this lamp which, as we have just seen, gives off water, gives off carbonic acid also, and we may detect it in the air issuing out of the lamp-glass.

The test of the presence of carbonic acid is, that it renders the lime-water milky. If I merely expose lime-water to the air, it also becomes milky, and you will always observe, that if a bottle of lime-water is left without a stopper, it will acquire a superficial film of carbonate of lime. Pure lime is soluble in water, but water takes up only the seven hundredth part. Now carbonate of lime is quite insoluble in pure water, and hence it is that when carbonic acid is brought into the contact of lime-water, *carbonate of lime* falls down ; and if I collect the carbonate of lime, and weigh it, I can determine the quantity of carbonic acid. There is, however, much difficulty in doing this ; the quantity being so small it is not easy to collect, dry, and weigh it ; so that we cannot depend on this method in *quantitative* proceedings, though, as a *qualitative* test—that is, as a ready and accurate test of the presence of carbonic acid—lime-water is invaluable.

I must now endeavour to shew you how carbonic acid is produced, how we accurately determine its quantity, and the mode of inferring from the weight of the carbonic acid produced during its combustion, the quantity of carbon that any body may contain. In this glass globe I have some perfectly pure oxygen gas, and also a little lime-water, and you observe that the lime water is perfectly pellucid, which shews that at present there is no trace of carbonic acid. Now, if I burn charcoal, or plumbago (commonly called black lead), or, if I burn the diamond, or any carbonaceous body whatever, and therefore any vegetable or animal substance, I shall produce carbonic acid. I will take the simplest form and use a piece of perfectly pure charcoal, and having heated it by means of the blow-pipe I will introduce it into the atmosphere of oxygen. When I do this you observe it immediately burns with great brilliancy; it dissolves completely and disappears, or is, as it were, dissolved. We cannot say it is *destroyed;* it obviously cannot have got out of the bottle. It is, in fact, dissolved in the oxygen, and has formed an invisible aeriform or gaseous compound. Now, I find that in this combustion of charcoal in oxygen, by which carbonic acid, is produced, the weight of the charcoal which is burned is to that of the oxygen in which it is burned, and which enters into chemical combination with it, nearly as 273 to 727 ; these numbers are to each other almost precisely as 6 to 16 ; so that, assuming the atomic weight of carbon or charcoal to be = 6, and that of oxygen = 8, I should say that carbonic acid consists of,—

	Atoms.	Equivalent Weight.	Per Cent.
Carbon	1	6	27·27
Oxygen	2	16	72·73
	1	22	100·00

Carbonic acid is the product of so many operations, natural as well as artificial, that I must not enter into its detailed history, but limit myself to some of its most prominent sources. In the first place, it is evolved in enormous quantity in that extraordinary process they call fermentation, from the mixture of sugar and water, with the addition of a little yeast. After a time the sugar begins to disappear, and in its place there is a quantity of alcohol and carbonic acid formed. Now, I infer from this, that sugar contains the elements of alcohol and of carbonic acid, and I find, that during the progress of this fermentation, in proportion as the sugar disappears, the liquor becomes spirituous, and carbonic acid is produced.

[Here Mr. Brande showed the results of the process of fermentation, and the evolution of carbonic acid; the latter was tested by lime, and extinguished an immersed taper.]

The process of fermentation, therefore, you observe, amounts to a kind of slow combustion of

sugar, during which it is resolved into carbonic acid and alcohol. By and by it will be our business to look into the details of these processes.

Then, *respiration*, as I have already mentioned, is a very abundant source of carbonic acid; in fact, we are continually throwing off carbonic acid from the lungs, in enormous quantity. Its source is the charcoal contained in our food, which, by a process analogous to slow combustion, yields carbonic acid, and evolves heat so as to maintain the temperature of the body. The amount of the carbon thus thrown off by respiration, and emitted along with aqueous vapour from the blood as it passes through the lungs, amounts, in the course of each twenty-four hours to about eleven ounces. Now, we find that the quantity of carbonic acid given off, varies in different individuals, and in the same individuals at different times in the day. Soon after a hearty meal a considerably larger quantity is given off, than in the morning, or when the stomach is empty. The reason of this will become apparent afterwards.

But the common and usual sources from which we obtain carbonic acid, are the varieties of carbonate of lime,—chalk, marble, and limestone, I take some marble, (which is a carbonate of lime,) and having broken it up, put it into a bottle, pour a little water upon it, and then add muriatic acid, an effervescence ensues, and carbonic acid is given off with great facility, and in great abundance. The chalk rocks which surround the London basin contain carbonic acid to the amount of many thousand tons, and in the operation of lime burning, it is set free, and goes into the atmosphere, where it performs a very important part, in reference to the nutrition of plants, by which it is absorbed and decomposed: they, in fact, assimilate its carbon, and return the oxygen to the atmosphere; and, strange to say, it appears to be from this source that nearly all the carbon of the vegetable and of the animal creation is as it were primarily derived; but of this, more hereafter.

I must, now, stop here, to refer to an important analytical operation, which is this; we are continually wanting to know what quantity of carbonic acid may be contained in any kind of limestone, and although I may appear to be going out of my way in reference to organic chemistry, you will find, afterwards, how important a part limestone forms in the soil, and, therefore, how essential it is to have the means of determining what quantity of limestone, or carbonate of lime, or chalk, exists there. For this purpose I weigh a certain quantity of limestone, say fifty grains, and put it into a flask in which I place a small vial of muriatic acid; to the mouth of the flask I attach a tube containing some fragments of chloride of calcium, or pumice stone soaked in oil of vitriol; the object of which is to stop any watery vapour that might, otherwise, escape out of the flask. I then incline the flask so that the muriatic acid may run out of the vial and come into contact with the marble; the carbonic acid is then given off, and escapes from the flask, the residue being finally expelled from it by heat. Now, by accurately weighing the flask before and after the expulsion of the carbonic acid, I ascertain how much carbonic acid has escaped, and so arrive at the composition of the carbonate of lime or limestone, for every twenty-two grains of carbonic acid which are evolved are equivalent to twenty-eight of lime, or to fifty of carbonate of lime.

Now, invariably when I want to determine the quantity of carbon in any organic body I convert it into carbonic acid, so conducting the process, that I can collect or condense the carbonic acid and accurately determine its quantity, (and consequently that of the carbon it contains) either by measure or by weight.

[Mr. Brande illustrated one of these processes, by causing the carbonic acid exhaled from his lungs to pass through a series of five globular vessels containing lime water; the precipitated carbonate of lime was collected.]

Another and much better mode of collecting the carbonic acid, consists in causing it to pass through the same apparatus, filled with a solution of caustic potash instead of lime-water, and accurately weighed: the potash rapidly and perfectly absorbs the carbonic acid, the quantity of which is learned by the increase of weight which the solution sustains—and from this datum the weight of the carbon may be very accurately inferred.

But it is now time to speak more at large of the properties and composition of carbonic acid, and to say something of the other compounds of carbon and oxygen. Carbonic acid is a heavy gas, which extinguishes flame; it possesses a number of other peculiar properties, which I shall not take up your time by detailing. I must, however, remind you that it is soluble in water, which will take up at a common temperature, about its own volume of it. I have here a solution of carbonic acid; it gives to the water an agreeable acid flavour, and a sparkling appearance when exposed to the air. It is familiarly known as giving an effervescing quality to many mineral waters. If I expose it to the action of lime-water, it produces a white precipitate of carbonate of lime; but you will observe that if I add excess of carbonic acid, the precipitate will be re-dissolved, so that the liquor will be perfectly clear although it holds the carbonate of lime in solution. There is no doubt lime often finds its way into water containing carbonic acid, which is, in fact, sometimes saturated with lime in proportion to the quantity of carbonic acid it contains. It further deserves attention, that water containing carbonic acid is sour, and reddens vegetable blues. It has, however, only a very slightly sour taste.

The carbonic acid held in solution in water performs a very important part with regard to the growth of aquatic plants; and you will find afterwards, that from the carbonic acid taken up from the air and decomposed by plants, a great deal of charcoal is accumulated. Now, when atmospheric air is held in solution in water, its oxygen is converted slowly into carbonic acid by the respiration of the fish and animals existing in the water, and the carbonic acid so produced is decomposed by the vegetables growing in the water, charcoal is taken up, and oxygen given off. Hence the reason why we cannot keep fish for any length of time in an ornamental basin, or in any piece of water where there are not vegetables growing. You may keep gold-fish in water exposed to the air, but, although the air has free access to it, you are obliged frequently to change the water, for it soon becomes so far charged with carbonic acid as to be unfit for the respiration of the fish. And in regard to streams and natural sources of water, if there are not a sufficient number of aquatic vegetables, the fish will soon die, in consequence of there being nothing to take up the carbonic acid which they throw off, and which ultimately poisons them. It is a very curious fact that the whole value of vegetables in water consists in their extraordinary power of taking up the charcoal, and setting the oxygen free; a power, however, which only belongs to the green parts of vegetables, and which they only exert under the influence of solar light. This apparently easy decomposition of carbonic acid, by the joint operation of the green parts of vegetables and of light, is a very extraordinary circumstance, for the affinity of carbon for oxygen is such, that the resolution of carbonic acid into carbon and oxygen, by common chemical means, is a matter of great difficulty, and can only be effected by substances possessed of a more powerful affinity for oxygen than that which carbon has. The consequence is, that almost all burning bodies are extinguished when immersed in carbonic acid. There are, however, a few—and only a very few—of the metals which, in consequence of their intense affinity for oxygen, will decompose, and consequently burn in, carbonic acid. Thus, if I introduce a piece of the metal potassium, heated in the air till it begins to burn, into a jar of carbonic acid, the combustion will continue at the expense of the oxygen of that gas, and its carbon will be thrown down. In many cases, when we decompose carbonic acid, instead of taking away the whole of the oxygen, we take away half of it, and then we obtain a gaseous body, which of course only contains half the quantity of oxygen which exists in carbonic acid. Now, observe the beautiful application of the atomic theory to these compounds,—Carbonic acid has already been stated to consist of one atom of carben, and two atoms of oxygon: if we abstract one of the atoms of oxygen we obtain carbonic oxide, which, therefore, consists of,

	Atoms.	Equivalent weight.	Per cent.
Carbon	1	6	42.9
Oxygen	1	8	57.1
	2	14	100.0

Carbonic oxide is the result of a great number of operations, in which carbonic acid undergoes imperfect decomposition. Like carbonic acid, carbonic oxide extinguishes the flame of a taper, and of almost all other combustibles; but, unlike carbonic acid, it is itself combustible, and burns in contact of, or mixed with, air, with a peculiar blue flame. We sometimes observe, in a clear coal fire, that a blue lambent flame plays upon the surface of the fuel; this arises from the conversion of the carbonic acid which is first formed, into carbonic oxide; that is, the carbonic acid produced by the first access of oxygen to the fire, acquires, by passing through the hot coals, an additional atom of carbon. This production of carbonic oxide, also, is apt to ensue where common fuel is burning with a very limited access of air: it sometimes is thus produced in Dr. Arnott's stoves; and when there happens to be any cavity in which it can accumulate, and where it gets blended with a certain adequate quantity of atmospheric air, it may perchance form an explosive mixture—for carbonic oxide and oxygen, in equal volumes, explode violently when ignited, and produce carbonic acid.

ON THE LAWS OF THE DEVELOPMENT OF ORGANS; OR TRANSCENDENTAL ANATOMY APPLIED TO PHYSIOLOGY.

By E. R. A. SERRES, Member of the Institute, of the Academy of Medicine, Professor to the Museum of Natural History. Paris, &c, &c., &c.

SUMMARY.—*Definition of an anomaly according to anatomists.—Three plans of organisation admitted by them for organized beings.—Difficulties to the union of the invertebrata with the vertebrata.—Composition of the ovule, and connexions of the vitellus with the embryo.—Causes preventing the ganglionic system of the invertebrata being regarded as corresponding to the cerebro-spinal system of the vertebrata.—Relation, function, &c., of these systems explained.—Existence of the great sympathetic in the invertebrata.—The ganglia of the invertebrata the analogues of the inter-vertebral ganglia of vertebrated animals.—Views of Aristotle, Galen, &c., upon the organs of locomotion.—Theory of homologues.—Varieties of position of the locomotive organs in the mollusca, &c.—The nervous ganglia follow these organs in their various displacements.*

EVERY thing is grand and beautiful in nature; even her irregularities and imperfections pre-suppose order and perfection. But the human mind, accustomed to the study of life in the larger animals, attempts to draw from their consideration an absolute idea of creation. All which does not reach, or which surpasses our conventional types, whatever even departs from their most ordinary arrangement, is declared an infraction of these supposed laws, and, as such, is sometimes rejected from the domain of nature as well as from that of science. It is from setting out with such notions that those zootomists and philosophers, who have turned their attention towards organised beings, have defined as an anomaly, or monstrosity, every conformation different from that which *ought to exist*, as if they possessed the certitude of knowing what ought to exist in an organised body!

It is this strange pretension which, more than all the systems, has checked the progress of the anatomical and physiological sciences, and arrested them in their onward course. We have seen Aristotle limiting animality to those beings provided with a heart; Galen declaring that incompatible with nature which did not harmonise with his final causes; and Haller, in his old age, admitting the existence of functions without organs. All this may appear absurd at the present day. Still we believe to have discovered the plan according to which vertebrated animals have been constructed, and immediately we declare that

anything departing from this plan, anything deranging our conceptions, must be rejected. Thus have anomalies, and monstrosities been placed upon a different level to that of the regular vertebrata; being considered to have special germs and peculiar laws of development. But while we were proceeding on this system of exclusion, new researches were unfolding the composition and the structure of invertebrated animals;—this, the most extensive branch of the animal kingdom, called for some classification. Where, then, could they be placed, according to our arbitrary laws? The organisms in them are found completely different from those of the vertebrata; every thing is altered, changed in place; that harmony, that correlation of parts which we had thought fit to declare inseparable from life, is in them no longer observed. They could not be ranked with monstrosities, inasmuch as the latter are, for the most part, not viable; whereas the invertebrata are living anomalies, subjected to constant laws of existence and reproduction. To escape from the embarrassment thus occasioned, it was supposed that the organisms of the invertebrata were constructed upon an especial plan, totally different from that of the vertebrata. Two creating powers or principles were imagined, the one for the vertebrata and the other for the invertebrata, each having its own laws of formation and development, and possessing nothing in common but life. We thus had three plans of formation; one for the vertebrata, a second for the invertebrata, and a third for organic anomalies.

But whilst man was creating these arbitrary divisions, nature was pursuing a totally opposite course. Organic anomalies have, by the progress of organogeny, already been re-subjected to the laws of formation and development proper to normal organisms. The barriers separating the invertebrata from vertebrated animals have at the same time been rapidly disappearing before the steady march of this science. I will now endeavour to show how far organogeny, in its present state, will tend to elucidate a question of such vital importance to anatomy, to physiology, and to zoology.

We must, then, commence by considering the principal difficulties which oppose themselves to the natural union of the invertebrata with the vertebrata. These difficulties are of two kinds: they arise, in the first place, from the inversion or transposition of the organisms in the invertebrata, and, in the second place, from the irreconcilable differences which separate the ganglionic nervous system of the inferior animals from the cerebro-spinal system of the superior ones. If, then, we are enabled on the one hand to explain by organogeny this transposition of the organisms, and on the other to show that the invertebrata are destitute of a cerebro-spinal system, and that their ganglionic nervous system corresponds in all points to the ganglionic nervous system of the vertebrata, we shall have smoothed down the principal obstacles which separate these two branches of the animal kingdom. We will now commence this subject by a consideration of the transposition of the organisms.

This transposition of organisms is undoubtedly the most unexpected and most singular fact presented by animal organology. It seemed perfectly inexplicable by a consideration of the structure of animals, whether vertebrata or invertebrata, when arrived at the term of their development. A new light has, however, been thrown on this subject by the cultivation of organogeny. Now, we know that in the invertebrata, as in the vertebrata, the ovule is, first, composed of an external membrane, of the proliferous vesicle and of the vitelline mass; secondly, that after impregnation, the proliferous or blastodermic membrane succeeds to the vesicle, and, like it, lies over the vitellus; thirdly, and lastly, that the mucous layer, from which the intestine arises, is in direct communication with the vitellus or umbilical vesicle. Thus far, a perfect analogy is maintained between the two branches; but here we shall find the organogenic cause of the transposition of which we have been speaking. In fact, during its first developments, the embryo of the vertebrata lies flat upon the vitellus, so that the formations proceeding from the external layer of the *blastoderma* must take place above the intestinal canal, which fixes the young embryo in this position. The attitude which the organisms take in the vertebrata is thus necessitated by the intestine, which forms a kind of vitello-embryonic ligament. Suppose now that the vitellus, instead of being placed below the primitive embryo, is situated above it, is it not evident that in developing themselves in this new situation, the organisms must necessary be placed upon their manifestation, directly below the intestinal canal, instead of being lodged above it, as in the preceding instance? Now, this is exactly what takes place in the invertebrata. This fact, first pointed out by Geoffroy Saint-Hilaire, has since been fully confirmed by the researches of MM. Ratke, Carus, Baer, &c.

Now that we are enabled to trace the necessary consequences of this primordial fact of embryogeny in the two branches, is it not evident that in the vertebrata the cerebro-spinal axis, which arises from the external layer of the *blastoderma*, must be placed above the intestine, whilst in the invertebrata their nervous axis will be placed below it? Is it not evident that the primary rudiments of the sanguineous system arising from the vascular layer of the *blastoderma* will be situated in the vertebrata below the intestinal canal, whilst in the invertebrata they must be placed above it? Do we not also see that the attendant parts of the nervous system in the two branches will be situated in front and above in the vertebrata, and below and behind in the invertebrata? All these arrangements necessarily follow in the harmonization of these fundamental organisms, to which the digestive system serves as the guide and as the pivot.

We thus perceive, in the first place, how the intestinal canal becomes the regulator of the organisms in the first stages of embryogeny; how its presence and its relations govern the situations which the nervous, the sanguiferous, and the locomotive systems assume around it; lastly, how the position of the primitive intestine is itself subordinate to the relation of the umbilical vesicle with the embryo in the two branches. It therefore follows that this transposition of organisms, so inexplicable when we consider the vertebrata or the invertebrata arrived at the full term of their development, is in itself found to be perfectly simple on carrying our investigations towards the first stages of organogeny, where we are enabled to trace on the one hand the successive appearance of the organisms, and on the other the necessary relations which become established between them. These facts inevitably lead to the conclusion that the invertebrata are, as it were, permanent embryos of the vertebrata. These latter, however, differ from the invertebrata, not only in the more perfect evolution of their organs, but they are especially distinguished by the addition of an entire organism, which, by reason of its importance, exercises over all the developments the most powerful influence. This organism is the cerebro-spinal axis of the nervous system. The vertebrata are, then, *cerebro-spinal* animals; the invertebrata are, on the contrary, *acerebro-spinal*. This *trait* is alone sufficient to characterise them, and renders the two branches of the animal kingdom perfectly distinct one from another.

One of the most incomprehensible results deduced from the supposition of the two plans of formation, was that of the assimilation of the central nervous system of the invertebrata to the cerebro-spinal axis of the vertebrata. Now this analogy is plainly rejected by all the established data of the anatomy and physiology of the nervous system; and my only object in instancing it, has been to shew to what consequences a vicious base of determination will lead in comparative anatomy. Let us now then endeavour to prove to what part of the nervous system of the vertebrata the central nervous system of the invertebrata corresponds. For this purpose we must bear in mind that besides the cerebro-spinal axis which characterises them, the nervous system of the vertebrata and of man is composed of two chains of ganglia, placed the one behind, and the other in front, of the bodies of the vertebræ; we must also remember that these ganglia communicate together by intermediate cords, which are sent reciprocally from ganglion to ganglion, so as to form along the spine four uninterrupted nervous cords, and lastly we must keep in recollection that these nervous chains are independent of each other, that is to say that the anterior is isolated from the posterior, with which it has no direct communication. This isolation of the nervous chains in the vertebrata is important, not merely in an anatomical but more especially in a physiological point of view, from the difference of function devoted to each in particular. Thus the anterior chain which constitutes the great sympathetic is devoted to the organs of vegetative or nutritive life, having nothing to do with the organs of the life of relation; while, on the contrary, the posterior chain constituted by the series of inter-vertebral ganglia is devoted to the functions of relation, especially to the locomotive apparatus, whilst its action is entirely unconnected with the functions and organs of the life of nutrition. This granted, we now come to the determination of the central nervous system of the invertebrata. In the first place I will remark that the nervous chain which appears single in insects, the *crustacea* and many *annelida*, is primitively double; there is one chain on the right side and another on the left; the traces of this duality are constantly preserved around the œsaphagus in all these classes, and frequently in insects and the *crustacea*, in different regions of the body. The unity of the nervous chain in the perfect invertebrata is then a result of their evolution; the more complete the metamorphosis in insects, the more perfect is the unity of their nervous chain; and, on the contrary, in insects which have undergone but a partial metamorphosis, the primitive duality is still traceable upon the united ganglia. In the fully developed *crustacea* this duality is perceptible in nearly all the associated or incorporated ganglia; lastly, the chain is completely disunited in the *talitra* and the *cimothoe*. In these latter *crustacea* there are two permanent ganglionic chains, and these two chains are an exact repetition of the two transitory nervous chains presented by the embryo of the craw-fish. We know moreover that the *cirripedes*, the *anodonta*, and the *balana*, constantly present, in their perfect state, these two nervous chains isolated one from another, an arrangement undoubtedly remarkable from its coincidence with the embryonic state of these animals, but more remarkable still, inasmuch as it serves as a connection with the nervous system of the *mollusca*, in which class the centralization of the nervous system disappears, so that the nervous chains are in them placed both on the right and on the left side, where they are maintained at a distance from each other.

We may then regard it as a demonstrated fact, that the central nervous system of the invertebrata is composed of two nervous chains totally separated one from the other, or associated in different degress, according to the class considered. It follows also that these two nervous chains of the invertebrata are the *analogues*, either of the two nervous chains of the great sympathetic of the vertebrata, or of the two nervous chains forming in these latter animals the line of inter-vertebral ganglia. This first step made, we have merely to specify to which of the nervous chains of the vertebrata those of the invertebrata correspond: is it to the great sympathetic?—or to the inter-vertebral ganglia? Physiology alone can elucidate this question. Now, we have seen that of the two ganglionic chains of the vertebrata, the one is specially devoted to the organs of vegetative life, whilst the other pertains to the locomotive organs and the life of relation. The special action of the ganglionic chain of the invertebrata must then define its determination; for, if devoted to the nutritive organs, it will be analogous to the great sympathetic; if, on the contrary, it be devoted to the locomotive organs and to the life of relation, it must then be considered as corresponding to the inter-vertebral ganglia. Now, everything demonstrates that the central nervous system of the invertebrata is the constant attendant of the organs of locomotion and of relation, it appears and disappears with these organs; it is altered in position according as the locomotive organs are transported from one part of the animal to another. It is shortened and concentrated when, in the passage from the state of the chrysalis

to that of the insect, the locomotive organs of the *larva* become concentrated and incorporated to constitute more perfect organs of locomotion. It follows, in fine, all the phases of the organs of the life of relation, whilst it remains entirely separate from the organs of the life of nutrition, thus resembling the inter-vertebral ganglionic system of the vertebrata.

This determination would be perfectly satisfactory, if we could find in the invertebrata any trace of the great sympathetic, which, as we know, has disappeared in great part in the two last classes of the vertebrata. Now this proof has been furnished by direct observation; in the first place, in the *crustacea decapoda*, and in the second place, in the *larva* of the *orycta nasicorna*, in which it is much more developed than in the perfect animal. M. Brand has also described it in several kinds of insects. This discovery of the great sympathetic in the invertebrata, is then not only important as a fact, but it becomes especially so when viewed as a means of determination. Now, the type of the relations of this organ is presented in the mammifera and man, where the great sympathetic is carried to its maximum of development. With which of the two nervous systems does it join itself in this class? With the brain and spinal marrow, or with the inter-vertebral ganglia? We may conceive that the connexion should here be in some measure decisive, for if the great sympathetic be habitually joined to the cerebro-spinal axis, undoubtedly the nervous chain with which it is related in the invertebrata should be considered as analogous to this axis. But if, on the contrary, it becomes united with the system of inter-vertebral ganglia, we should then regard the nervous apparatus of the invertebrata as its true representative. Now, it is scarcely necessary to say that, in man and the mammifera, the cords of the great sympathetic are invariably connected with the anterior branches of the inter-vertebral ganglia. Connexion thus comes as a further corroboration of the true character of the nervous system in the lower animals.

Aristotle, having traced the line of demarcation separating animals from vegetables, directed his attention in an especial manner towards their locomotive apparatus. Galen, who searched much deeper into their mechanism and action, applied the name of *member* to every part moving under the influence of the will; every movement performed out of the domain of this empire was classified, even in the superior animals, among the vegetative movements, having for their object the preservation of life. In consequence of this physiological view, Galen distinguished the organisms of animals into two classes, the organisms of relation and those of nutrition, a division which has become celebrated since the time of Bichat, under the name of organs of animal life and those of organic life. But Bichat, who confined his researches to the human subject, did not venture to apply the name of member to the tongue, the larynx, the eye, the maxillæ, &c.; he limited himself, like his predecessors, in the application of this term to the superior and inferior extremities. The parallel which Galen had sought to establish between the organisation of the upper and that of the lower limb, developed with such perspicuity by Vicq-d'Azyr, was followed up by Spix, Oken, and Meckel, who, under the name of *homology*, carried to its extreme consequences the original idea of Galen, seeking to establish a similitude between the extremities and all the voluntary apparatus. This attempt failed in the vertebrata from the imperfection of our knowledge upon their embryogeny, but in the invertebrata, where the embryonic organisation is so striking, *homology* was not limited to the apparatus of translation, it was, especially in the *articulata*, clearly demonstrated in all the regions of the body. We shall not, however, follow these anatomists further through their researches on this subject.

Now, as we have previously said, the nervous system of the invertebrata is the constant attendant of the locomotive organs. This fact is the more striking, inasmuch as nothing is more variable in the organisation than the position which the organs of locomotion occupy in the *mollusca*; sometimes they surround the mouth, at other times they are placed in the form of *alæ* or of claws upon the sides of the head, as in the *pteropoda* and *brachiopoda*, sometimes they are carried, as in the *gasteropoda*, beneath the abdomen, sometimes their appendices form, as in the *cephalopoda*, a kind of crown surrounding the head; while at other times the appendices, transformed into true articulated limbs, are arranged in lines upon the sides of the body, as in the *anatifa* and the *balana*; lastly, in the *bivalves*, locomotion being confined to the opening and shutting of the shell, its apparatus is composed of muscles which perform this office.

If the nervous system of the invertebrata be principally devoted to locomotion, if it truly represent the chain of inter-vertebral ganglia, we see as a consequence that the ganglia composing it should follow these various displacements of the locomotive apparatus. Now such is really the fact, and they do follow them in a manner so constant, that it is surprising that this relation has not hitherto attracted the notice of zootomists. Thus in the *lingula*, of which M. Cuvier has with reason made a distinct family under the name of *brachiopoda*, the ganglia, or what is denominated its brain, are situated upon the sides, and in a constricted space at the base of each claw. In the *clio borealis* the largest ganglia are placed at the root of the two bodies, which have been compared to *alæ* or wings, by reason of the use which the animal makes of them in moving itself. In this respect, the *thetys* may be associated with the *clio*, for the muscular appendage surrounding its head, and by means of which it propels itself along, may be considered as the two *alæ* of the latter animal, united together and spread over a larger surface. Now, in the *thetys* as in the *clio*, the principal ganglia of the nervous system are seated at the two lateral roots of this locomotive apparatus. The numerous family of *gasteropoda* is especially remarkable for this displacement of the nervous system, for at whatever point we find the foot beneath the abdomen, there also we constantly meet with the larger ganglia placed above the muscles destined to move it. The *patella*, the *oscabriona*, the *limacea*, the *helicea*, present striking examples of this arrangement.

The next family that comes under our consideration is that of the *cephalopoda*, a family in which we find the organs of locomotion concentrated around the head. Now, in these *mollusca*, the nervous ganglia instead of being scattered, as in the *brachiopoda*, the *pteropoda*, the *gasteropoda*, *&c.*, are all, following the locomotive organs, grouped around the head, where they form a very considerable nervous mass. In the *bivalves*, on the contrary, which are *acephala* in the true acceptation of the word, these ganglia are of much more slender proportions. The *bivalves* are in some sort parasites, they do not stir from their place. Their locomotion is limited to the movement of the valves upon their attachments, which movement is executed by two strong bundles of muscular fibres inserted into their vicinity. In the centre of each bundle of muscles are lodged the two ganglia which represent their nervous system. So that here also, this system is completely subjected to the locomotive apparatus. Such is the constant law. The concentration of the *palpæ* around the head in the *cephalopoda* leads to the centralisation of their nervous system at this part, but by depriving other regions of it to such a point, that nothing is found in them which can be compared to the spinal marrow of insects and of the *crustacea*. But suppose, as takes place in the *crustacea* and insects, that the locomotive apparatus completely abandon the head, and become ranged along the sides of the body, we then find the nervous ganglia assuming an exactly similar position. Such is precisely what occurs in the *cirripedes*. These animals are distinguished from other *mollusca* by their horny and articulated limbs, which (six in number on each side) are placed upon the lateral regions of the body. They are equally distinguished by the atrophy of the parts constituting the head, insomuch that these animals are almost acephalous. This remarkable organisation is exactly reproduced in the nervous system, for whilst the nervous ganglia are placed opposite each limb over the movements of which they preside, they so completely abandon the head that the greatest tact is required to discover the cephalic filament which completes in front the nervous chain of the *anatifa* and the *balana*. Such is the condition throughout the entire class of *mollusca*. The analogy then between the nervous system of the invertebrata and the inter-vertebral system of ganglia of vertebrated animals is fully established; in the one branch as in the other, we see these ganglia devoted to the service of the limbs, governed by them in their number and size, and lastly, corresponding to them in position. This displacement of the ganglia, which constitutes so remarkable a character of the nervous system of the invertebrata, is rendered possible only by the intermediate filaments analogous to the inter-vertebral filaments, which become elongated or shortened according to the necessity engendered. In whatever way then we view these facts, this analogy is fully borne out.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

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THE phenomena of asphyxia, to which we have now to advert, are very interesting. The various causes of asphyxia are shown in this diagram.

[The lecturer here exhibited the diagram given in page 414.]

In this it will be seen that there is a sort of double chain of causes:—the circulation supplying the venous system on which the respiratory function depends:— and a second chain connected with the true nervous system which may be also called a sort of circulation. Any interruption of either one of these, or *further*, any mechanical injury to the lungs themselves, may produce the phenomena of asphyxia. I might go on to say that the action of the heart depends directly on that of the lungs as we have already seen in some degree. But although it is similarly dependent on the nervous system, yet the heart may continue to act, although the nervous system be partly removed; as, for instance, in the case of decapitation of animals, or any injury done to the nervous system, the heart continues to act until the lungs become gorged with blood, and a mechanical action of the heart may be kept up, independently of the nervous system, except so far as that system tends to keep up the act of respiration. This matter, however, belongs more to the department of pathology. I have mentioned some of the symptoms of asphyxia, but I have to allude to some others arising chiefly from venous congestion; the blood being stagnated in certain parts of the body. Thus, the symptoms of disorder may continue after the asphyxia has been relieved, and delirium may be the result of the continuance of black blood in the brain, producing something like apoplexy. Stupor may arise from the same cause, the distention of the vessels and the continuation of the action of the venous blood on the brain. There is, likewise, a persistence of cough from the continuation of the congestion, which may be converted into pneumonia or bronchitis. There are also after asphyxia various irregularities of the heart's action, from the great violence done to its function by the unusual extension of its right cavities, and there may be various symptoms arising from disordered circulation in other parts,—sickness, vomiting, and diarrhœa. Stoppage of the blood, however simple at first, if it continues without producing death, soon may cause more or less of these complications. It ceases to be simple in that state, and this is more particularly the case when the asphyxiating cause is disease. Now, there are some varieties of asphyxia exhibited arising from different causes. For example, when it arises from strangulation or impediment to the entrance of the air—an impediment seated in the large tubes, chiefly in the larynx or trachea, or any of the upper orifices of the air tubes. Under these circumstances there is often more congestion in the head. In case of strangulation from hanging there is congestion of the head by the pressure of the blood on the brain, and death from hanging is in some degree produced by this congestion. Sometimes it is from disloca-

tion of the vertebræ, but that is a case of death from asphyxia, not merely with regard to the mechanical constriction of the trachea but by cutting off the communication of the nervous system with the brain. In the case of asphyxia from bronchitis the effect is often that of pressure of blood on the brain. This is more manifest in the case of asphyxia from inhaling carburetted hydrogen or carbonic acid gas, both of which exercise a narcotic influence. There is also asphyxia from drowning, and various other varieties may arise in connection with the particular action of the asphyxiating cause. I need not enter into these now, as they are described in the lectures on materia medica and on medical jurisprudence. Now, as to the treatment of asphyxia occurring from external causes, from spasm, or impediment in the upper part of the air tubes by a foreign body, or anything causing such an obstruction that death is threatened from strangulation by the stoppage of the passage of the air. Where the breath has been suspended for some time by various external asphyxiating causes, the great object is to bring about a return of the natural actions. In this case not only is the breathing apparatus to be excited by various stimulants, but the heart's action is to be excited too. In some cases after the irritating cause has continued long, the pulse is extremely feeble, and it is necessary to stimulate, particularly by the application of warmth to promote the action of the heart. In some cases not only is the action of the heart to be promoted, but the power of swallowing being lost, the stomach pump is to be used and matters to be injected into the stomach; and in this case cold affusion, suddenly dashing cold water on the surface of the body, will arouse the heart's action and restore for a time the deficient irritability of the heart as well as arouse the actions of inspiration. Irritating matters, too, applied to the nostrils will have the same effect. There are various means by which the incident nerves connected with respiration may be acted upon, and besides those which I have mentioned, cold air suddenly blown on the body will excite respiration in persons asphyxiated. The same thing may be done in pneumonia by stimulating the nostrils. But it may be that the nervous power is lost, and under these circumstances we must yet try to stimulate it by more searching means. For instance, there may be irritability enough in the muscles of respiration to render them excitable, and under these circumstances, shocks of electricity are sometimes useful by causing a sudden spasmodic action of the diaphragm which contracts, so causing inspiration; and, in some instances, when the diaphragm is not to be excited in that way, it has been reached by passing needles into the chest on a level with the diaphragm; and fine needles have been passed even in the direction of the viscera without producing injury. All these things may fail, or even where they do produce some motions, the motions may be insufficient to arterialise the blood so effectually as to promote a return to its natural action, and it is under these circumstances that it becomes needful to substitute mechanical means, and breathing by artificial respiration, blowing air into the lungs, and then by pressure and other means imitating the act of expiration; by inflating the lungs by means of a pair of bellows, or a syringe, and then pressing the air out by pressure on the abdomen, or on the walls of the chest, are among the means which have been adopted for this purpose. There are some precautions necessary in performing this operation. It is necessary to prevent the passage of the air into the œsophagus, and not to throw the air in with too great a degree of force, or in any great quantity, for the consequence may be that it will do violence to the lung and produce emphysema. The operation should be so conducted as to represent as near as possible the natural respirations, to supply something to make up for that which is lost. It should be done by short and frequently repeated respirations, as many as twenty-five or thirty in a minute. For this purpose a very ingenious apparatus has been contrived by the inventor of the stomach-pump, for blowing air into the lungs, and for drawing carbonic acid off. It is rather an expensive apparatus, but it is very effectual, and one advantage which it has, is that the air may be warmed before it is introduced. In case of asphyxia from drowning, on the other hand, this is a disadvantage, for warm air, in that case, is not so beneficial as cold air, which is more refreshing, and from the greater quantity of oxygen which it contains, tends more rapidly to restoration. Not that oxygen is the proper means of living, for we could not live on an increased proportion of oxygen in the air; it would consume us by its combustible quality, but under these circumstances, there is an accumulation of matter to be burned away, and we wish for an additional supply of oxygen to remove these products and to convert the blood from its venous state. These are the immediate indications, to restore the respiratory function and the heart's function by stimulants. It may be necessary to keep this up for some time; the breathing process is not restored to its regularity for some time after it has been deranged, and therefore it may be necessary to watch the function for some time after the natural action has been restored. The brain is apt to go back into a state of congestion. There is another indication often arising in plethoric individuals, that is, to relieve the congestion which the asphyxiating causes have produced. Some experiments on animals illustrate this very well. In those cases where respiration is not kept up naturally, and the right side of the heart is very much congested, so that artificial respiration will not restore its action, drawing off the blood will set the heart in motion; and in many other cases of asphyxia, frictions and external stimulants are useful for the same reason, and various means to promote circulation through the whole body. It is desirable, to relieve the congestion, to employ purgatives. There is congestion of the alimentary canal, and great torpidity of the bowels, and symptoms appertaining to a condition of diarrhœa; the action of the liver is also commonly defective after prolonged asphyxia, and it is necessary to use mercurial aperients and antimonial salines for some days after the asphyxia has been removed. Congestion of the lungs indicates this in many cases. The patient after having been in a state of asphyxia, is not safe from disease until all the secretions are re-established. For, in many instances, it has happened that persons whose respiration, and whose pulse have been restored from the immediate effects of asphyxia, have died afterwards from apoplexy, or congestion of the brain, or pneumonia, and sometimes from syncope,—a state of sinking produced by the continued action of the asphyxiating cause. The treatment chiefly consists of means that act on the secretions.

Now, with respect to diseases of the respiratory organs, we may begin with the superficial ones, those that affect the mucous membrane, and in order to make you acquainted with these diseases in their elementary forms, it will be necessary to take the diseases that are of more common occurrence. I shall commence with the inflammatory diseases, and then diverge to the others, taking first the diseases of the mucous membrane of the most superficial kind, then the deep seated, and then go into the other anatomical constituents of the respiratory organs. taking the lungs and the pleura successively.

First of all, then, diseases of the mucous membrane. Inflammation of the mucous membrane from the nostrils to the air cells; this inflammation affecting superficially the mucous membrane is called catarrhal, and very commonly called mucous catarrh, or coriza, where it affects the nasal passages first, and subsequently the air tubes; it constitutes a common cold, and is one of the commonest diseases we are familiar with. In its first attack it may exhibit itself in a variety of forms, sometimes in the throat, and sometimes in the nostrils, and sometimes in the glottis. It may sometimes affect the Eustachian tube, and in that case the hearing is affected. There are various ways in which it may commence, and, perhaps, the commonest way in which it begins, is a sort of tickling and soreness of the throat, which is accompanied by a chilliness, and which passes on to a slight form of fever and often head-ache. In coriza the nasal passages become obstructed first of all by congestion of the membrane, and particularly of the membrane underneath, the discharge of irritating matter causing an irritation of the nostrils, with sneezing and suffusion of the eyes and a copious flow of tears; its discharge is a thin saline fluid, and its excoriating effect may be seen by the manner in which it makes sore the lip, and the parts over which it passes. When this form of coriza is pretty severe, causing influenza in the more aggravated form, pain in the lung, costive bowels, and high coloured urine are often the consequences of it. It comes on sometimes worse than at other times, and is particularly apt to increase by exposure to cold, and transitions from cold to heat, and from heat to cold. In a few days a tickling is generally felt in the glottis, and frequently at the upper part of the sternum, and there is a roughness in the throat and a disposition to cough. At first the cough is dry, but afterwards there is expectoration of a clear and soft mucus, and in this case the cough is more troublesome, coming on as in fits with hooping, showing that there is increased irritability, as well as that the secretion is more irritating than usual. Sometimes there is a feeling of heat or soreness, or a dull pain referred to the chest; when the cough is very severe and hard, the mucus is sometimes streaked with blood. The physical signs of this form of coriza are increased swelling and tumefaction of the membrane lining the nostrils, and, consequently, obstruction. And any person may detect this physical sign by listening to the snuffling noise that is produced from the impediment in the nose. Sometimes it becomes a more serious disease, and the physical signs are the sonorous, sibilant, and other ronchi. When it goes deeper into the chest it constitutes another form. In the first instance, there is a little mucus, and the respiratory murmur is slightly impaired; after a few days that sensation diminishes, and it may cease from the nostrils, and it does so generally when followed by a cough. It seems as if the inflammation extended downwards into the air tubes; but in other instances the secretion undergoes a change, even in the nostrils, from a semi-transparent to an opaque clot, of the colour of brimstone, which is thrown out from the nostrils. The same thing takes place by inflammation in the mucous membrane of the air passages; the mucous secretion as it subsides becomes more consistent, less saline, and more opaque, until gradually it diminishes in quantity and ceases altogether. There is with this in the character of the expectoration, a diminution of the other symptoms, and consequently the fever abates.

Now, the pathology of this disease consists, no doubt, chiefly of inflammation of the lining membrane, a wide spread and diffusive sort of superficial inflammation, not causing intense disease in any one spot, but tending to diffuse itself over a surface. One remarkable character of the secretion resulting from the inflamed membrane is its acrid nature. This inflammation lasts from a few days to sometimes three weeks, and is apt to be prolonged by repeated exposure to cold. It occurs in bronchitis in the form of obstinate cough. Sometimes it is connected with disorders of the digestive organs, and inflammatory dyspepsia is very apt to occur.

Now, the treatment for this affection is of two kinds: palliative, allowing the disease to run its course, or stopping it altogether. The palliative treatment consists in salines, antimonials, and slops, and things to act on the secretions. This treatment is useful, no doubt, but its efficacy depends chiefly on confinement to the house, and in promoting perspiration from the surface, free respiration, and freedom in the secretions; but if, during the treatment, the body be exposed, and a cold shock is given to the respiration, the inflammation becomes worse. Thus the mild treatment is rarely sufficient to cut short the disease. There are two modes of stopping or cutting short this catarrhal inflammation; one is by large doses of opium or stimulants at the commencement of the cold. Laennec recommends plenty of hot stimulant drinks to produce perspiration and thus carry off the cold. But sometimes these hot stimulants fail in removing the inflammation, and when they do so, they make it worse, they aggravate it, and cause bronchitis, and a slight cold may thus be converted into pneumonia or some other disease. The treatment requires to be of an absolute character, that is a total abstinence from

liquids for two or three days. It is a plan which has been ridiculed by a good many, but experience has proved its efficacy, and the principle of it seems to be that of cutting off the source from which the diseased and acrid secretion is derived and kept up. Abstinence from liquids for two days, or at the outside three days, produces a very perceptible diminution in the mass of circulatory fluids, and in that case the supplementary secretions are stopped altogether, and the natural secretions are very much diminished in quantity. The secretion of the urine is very much reduced, but not in proportion to any unnatural secretion that may be present. To produce a permanent effect it is necessary to abstain for a longer time. In the application of this treatment, it is necessary to abstain from liquids during the daytime, or the morning, or those times at which the body is apt to be exposed to transitions of temperature, and taking a little the last thing at night when going warm to bed, does not interfere with the efficacy of the treatment, whilst it contributes to the comfort of the patient. The efficacy of this plan varies in many cases; if the disease is very severe it is necessary to abstain from liquids for three days, more especially in damp weather, and where the secretions are not entirely free; but in dry weather two days is enough, sometimes even thirty-six hours. This period may be much shortened by using means to increase the natural secretions, or when perspiration can be promoted at the time the patient is drying up. How far this treatment is applicable in other cases I do not know. Dr. Hamilton, of Edinburgh, used to assert that a total abstinence from liquids was one of the most important parts of the treatment for diseases of the lungs. It certainly would never do alone in such serious diseases as pneumonia, and it is a matter for further examination how far it may be useful in cutting short serious diseases? I am quite sure that it is useful in many serious affections of the chest.

Severe bronchitis differs from the mild form only in the extent to which it affects the tubes, and the divisions of the tubes where the vascular circulation is not free, and likewise where the expectoration is less easy. When the mucous membrane of the trachea and air tubes is affected in mild bronchitis, or in catarrhal inflammation, the matter accumulated is easily expectorated; but when it is secreted further down, deeper in the chest, and in the texture of the lungs, it affects a great part of the substance, and not only impedes the respiratory function in a serious degree, but likewise it is more difficult to be got rid of. Now, there are two kinds of severe bronchitis, important to notice and to distinguish; they are the sthenic kind and the asthenic kind; the sthenic implying a determination to inflammatory fever, and the asthenic where the symptoms are less permanent, but more severe, and influencing the function still more. In the sthenic form, the inflammatory symptoms are mild at first, with pain, a constriction across the sternum, hard and severe cough, and glutinous and transparent expectoration. There is fever, heat, thirst, and scanty urine, and the pulse is quick and hard, with a feeling of great oppression in the morning. The expectoration is increased in quantity in the evening, and at night there is cough, fever, and dyspnœa, and where this dyspnœa becomes superadded and occurs to a great extent, the oppression becomes one of the chief characteristics of bronchitis. The expectoration announces in some degree the intensity of the inflammation, which is often in proportion to the viscidity or deficiency of water, and likewise to the saline properties of the expectoration, and its tendency to coagulate by heat. This is not the case with regard to the common expectoration, nor even the mild catarrhal. It appears, then, that the expectoration, in the deep seated inflammation, is viscid, glutinous, and albuminous in proportion to the intensity of the inflammation. All this indicates the deep seated inflammation which affects the vessels not merely at the surface, but the vessels which secrete serum which becomes mixed up with the mucus. But when you come to the thin vesicular texture, there is there more immediate contact with the blood-vessels, and sometimes there is secreted a plastic matter, not merely in the semi-liquid form, but coagulated,—a false fibrine. The physical signs are like those of bronchitis, but more hollow. There is the sibilant sonorous ronchus, sometimes reaching to the interior of the lungs, showing that the secretion reaches down to the texture of the base of the lungs itself.

SHORT APHORISMS ON THE TREATMENT OF UTERINE HÆMORRHAGE.

By CHARLES CLAY, Member of the Royal College of Physicians, London, &c. &c., Lecturer on Medical Jurisprudence, Manchester.

Hæmorrhage during the Third Stage of Labour.

HÆMORRHAGE may occur during the third stage of labour, either before or after the removal of the placenta. At this stage of labour, hæmorrhage occurs more frequently than at other times.

If it should take place after the birth of the child, and before the removal of the placenta, it is evidently owing to two causes,—first, the want of contractile power in the uterus itself; and, secondly, the partial separation only of the placenta from the inner uterine surface. Under these circumstances, the duty of the practitioner consists in stimulating the uterus to contract, the renewed action of which has the direct effect of closing the mouths of the vessels pouring out blood, and also of removing the placenta entirely from its attachment, the accomplishment of which ensures the safety of the patient. Stimulants, externally and internally (to the manner of using which I shall soon direct attention), are the chief agents of relief in such cases. I may here state, however, that I do not recollect ever having a case of hæmorrhage in the third stage of labour, where the secale cornutum had been judiciously used. By *judiciously*, I mean, not only a proper case for its exhibition, but proper attention paid to the article used, and the best manner of using it, for which I refer the reader to a paper of mine on the Secale Cornutum, in the *Medical Times* of Sept. 3rd and 10th, 1842. Vol. VI.

After the child is born, there is sometimes a difficulty in defining the uterine mass through the external parietes; this arises from non-contraction of the uterus, and its lying in the abdominal region as a loose, flabby, uncontracted mass; under these circumstances, if hæmorrhage is not present, and means not taken to prevent it, it certainly will occur, either by filling the cavity of the uterus, without escaping externally (constituting *internal hæmorrhage*), or by escaping, *per vaginam*, in the usual manner. In either case, if stimulants, friction, cold applications, &c., are not sufficient to control it, the hand must be introduced, and the coagulated masses cleared away, with this precaution—*when once the hand is introduced for that purpose, it should never be removed until the uterus contracts upon, and expels the hand*; lastly, pads and bandages should be carefully applied to keep up a good artificial pressure over the uterine region, as a preventive against any return of the hæmorrhage. There is scarcely any thing more important to the practical accoucheur than the application of bandages in all cases after parturition, but they are more than usually necessary after hæmorrhage.

Hæmorrhage after the Removal of the Placenta.

This is external or internal.

Cause.—Hæmorrhage in these cases is owing to the inability of the uterus to contract after its contents are expelled, in consequence of which the mouths of the vessels on its inner surface are not obliterated, and are, therefore, pouring out blood. This species of hæmorrhage is caused by protracted labour, hurried labour, instrumental labour, and after abortion. I have also noticed that females with pendulous bellies are very liable to hæmorrhage of this species.

General Treatment.—The external application of friction, light bandages, cold applications,—internally, the exhibition of stimulants, head laid low, loins raised, cool air admitted, light clothing,—all of which should be perseveringly had recourse to. If the hæmorrhage be external, and does not easily give way, the same principles are to be more vigorously applied—pour the water over the region of the uterus from a great height, or apply ice in lieu of water; in the exhibition of stimulants internally, it is often necessary to give them very extensively, as small quantities have no effect. If the hæmorrhage still continues, the hand must be introduced, the coagula removed, and the hand not withdrawn until the stimulus occasioned by its presence in the uterus, has caused it to contract and expel the hand. The introduction of the hand ought never to be practised unless *all other means have failed*,—as a last effort, it is the best known remedy. Acids of various kinds, mineral and vegetable, have been recommended, but it is absurd to suppose there is time to wait, in such cases, for their action on the system. Plugging the vagina has been recommended; and, in cases of hæmorrhage, before the uterus has expelled its contents, it is in some measure advisable: after all, it appears a very absurd means of relief, and contrary to the principles of common sense. After the contents of the uterus are expelled, as in subjects of this chapter, plugging the vagina is a most unjustifiable and very pernicious remedy; it tends to convert an external hæmorrhage case to one of internal hæmorrhage, rendering the case more unmanageable, and increasing the danger of the patient's life to an imminent degree. Transfusion of blood is another means to be resorted to in desperate cases, of which I shall speak more fully hereafter.

Of Internal Hæmorrhage more particularly.

This hæmorrhage does not appear externally, but, exuding from the inner surface of the uterus, gathers in the form of a large ball-like mass within the uterine cavity, often distending it to the size of a seven or eight months' period of gestation. Of this species of hæmorrhage little was known till within the last thirty years. The attention of medical men, however, was painfully directed more particularly to this circumstance, from the death of the lamented Princess Charlotte, under the care of Sir Richard Croft, a gentleman of the highest standing in his profession, but who was unfortunate enough to allow royalty to make an impression on his mind, disabling him from fulfilling those duties which, under less responsible circumstances, he would have accomplished ably, and with every probability of happier results.

In all cases of internal hæmorrhage, it is highly necessary to act with the greatest promptness and determination, over which neither the station of the patient, nor the circumstances of the case, should have the least control. Protraction of the first stage of labour is often esteemed the cause. There is much in the habit of the person; those prone to obesity I have known most frequently liable to it; in *post mortem* examinations the uterus is found full of coagulated blood, very solid, and generally in one large mass, like a ball. There is no doubt of its being formed by successive layers of blood, first on a small nucleus, gradually enlarging by fresh layers, until the system is entirely drained.

The Symptoms generally are—Dim eye, great prostration of strength, continued syncope, doughy feel of the uterus, uterus enlarged, vagina often filled with coagula, pulse weak and intermitting, tossing of the arms upwards and backwards, and general restlessness.

Treatment.—All the means generally used for the suppression of hæmorrhage, and the promotion of uterine contraction, already spoken of, must be put into requisition. The life of the patient in extreme cases, however, must depend on the introduction of the hand into the uterus, clearing out the whole coagula, and never withdrawing the hand until satisfactory contraction is excited. Nor is the patient yet safe from a return of mischief, if bandages, and pressure over the uterus by pads, are not properly applied: of all other cases that of internal hæmorrhage requires the greatest attention in respect to bandages, and it is to be much lamented that authors generally are too lax in their directions for bandaging; a circumstance of the highest import to the obstetric practitioner. Although I am unfavourable to the action of opium in such cases, I am willing to admit I have seen it of service in some cases as a stimulant, in small doses. In hæmorrhage, not connected with highly-increased vascular action, opium is useful, by removing that increased irritability whence the hæmorrhage frequently arises. It is thus bene-

ficially employed in passive menorrhagia, and in hæmorrhage succeeding abortion, and delivery.

Hæmorrhage from an Inverted Uterus, has happened in the practice of midwives, but could never take place in the practice of a prudent practitioner. It is only necessary to observe that it is easily detected, and the object should be, to restore the uterus to its normal state, when, in all probability, the hæmorrhage will cease; if not, its treatment will be found in the foregoing remarks.

Concluding Remarks respecting Hæmorrhage generally.—If the patient must die, let it be after every exertion has been made without effect. If a practitioner arrive early, before much blood is lost, there is every probability (with the means advised energetically used) of a favourable result: if the means are not energetically put in force, and death the result, the attendant cannot reflect on it with satisfaction to himself.

Vomiting, as the excitement produced by it often induces contraction of the uterus, is not so unfavourable a symptom as some have supposed. A bright eye, short sleeps, indications of a return of pains, are favourable symptoms. It is imperatively necessary not to leave the house until every suspicious circumstance has subsided; and in respect to these, never trust to the representations of nurses, by which it is probable you may be misled. Your own hand and eye should assist you in drawing the necessary conclusions. On leaving a patient, after an attack of hæmorrhage, perfect stillness should be insisted on in the practitioner's absence—the patient not even allowed to rise for voiding urine or motions—the head must be kept low, loins raised, apartment cool, cold acidulated drinks, and freedom from all excitements. This plan must be rigidly persevered in for 24 hours,—the food being panada, acidulous fruits, &c. After the first 24 hours, a slight deviation from the rigid rule may be admitted. The head may be a little raised, and if much languor be felt, weak cordials may be given; but such are perfectly inadmissible if there exist any pain in the head, a circumstance that needs carefully watching, as it may terminate in phrenitis, mania, &c., the treatment of which, as well as other diseases arising from a debilitated system, I am not about to enter into, in connexion with this subject.

In conclusion, never use the plug in internal hæmorrhage, as it only increases the evil. It has been recommended, in desperate cases, to inject into the uterine cavity, with a clyster-pipe, stimulating fluids, such as brandy and water (a means not unworthy of trial); but I should prefer transfusion of blood from a healthy individual, bearing in mind that a small quantity of blood is capable of stimulating considerably; care should, therefore, be taken not to inject too much. Let the pads and bandages never be forgotten,—then, if the patient dies, you will have the satisfaction of having done your best to save her.

MR. PARKIN ON GOUT.

To the Editor of the "Medical Times."

Sir,—In the notice of my work, contained in your periodical, (May 28, 1842), it was erroneously stated that only *one* case was given; the reviewer adding, that no doubt *I could* have given numerous, such was certainly the fact, but, having witnessed a similar result in all the cases I had attended, I contented myself with two, one showing the effect of the remedy during the paroxysm, and the other its ultimate result, adding that, as far as my experience went, the remedy in question, carbonic acid gas, shortened the paroxysms and lengthened the intervals of the attacks to a greater extent than any other, with which I was acquainted, so that attacks, which before lasted two or three months were reduced, in the end, and after the lapse of some years to as many weeks, or days; while the disease itself, instead of returning twice, or three times every year, was only experienced every second, third, or fourth year. But, although this was considered sufficient for the object comtemplated, I was in hopes that some of my professional brethren would, ere this, have been induced, not only to give the remedy a fair and proper trial, but, at the same time, to make the result of that trial public, for it was in that hope and expectation I published the work in question. Being disappointed, however, in this respect, and having received several private communications on the subject, I have selected the following case, from among several others, thinking that it may not be uninteresting to the readers of the Medical Times. The particulars were forwarded to me a short time since, from Barcelona, where my work is about to be published in Spanish; Dr. Fritz being now engaged in translating the same. The writer is an English gentleman, who, having experienced an attack of gout last spring, wrote to me for directions respecting his own case, and, subsequently, for that, the history of which I am about to relate.

After speaking of the satisfactory state of his own health, the writer thus continues:—"You must know, then, that your remedy appears to have effected a *radical cure* in the patient, who has been under our charge since last June. It is such a striking case of the success of your treatment, that it really deserves to be added to the work; and I regret very much, that I am so little qualified to draw up a report for that object. I could, however, get something like a deposition from the patient, attested by respectable witnesses, if such a document could be, of any service in making known the wonderful effect of *carbonic acid gas*."

"The person in question (a Spaniard) is about 40 years of age, and has suffered very severely for about 15 years, with three or four attacks every year of *the most severe kind*, the disease generally commencing in the hands, or feet, and extending itself to the elbow, knees, shoulders, &c., and, on one occasion, to the testes. He describes the agonies he used to suffer as so great, that he has frequently called on those about him to put an end to his existence. His fingers are distorted and crooked, and, in short, although it may be an improper remark, on such a serious subject, he went by the nick name of "Commander of the Gouty Legion."

The draughts (effervescencing) were administered to him, in the first instance, at the outset of an attack in the right hand, brought on, as he supposed, by a fit of passion the preceding day. The inflammation subsequently reached the elbow, but went no further. He complained, however, of the pain this time being even greater, if possible, than he had ever suffered, and, being an ignorant man, had got it into his head, that it was owing to the disease not being able to spread as usual; by which all its malignity was concentrated in one spot. I made him take the draughts every three hours, supplying him out of my own stock of French soda, not trusting to the Spanish, which, you know, is inferior. *In three days* he came round, the violence of the pain, and inflammation, having entirely subsided; after which he only took the draughts three times a day, until all symptoms of the attack had disappeared."

After this, he continued quite free from the disease for three months, when symptoms of another attack were felt; but, full of belief in the efficacy of the remedy, he passed the first, or better part of the night in taking a draught every two hours, or even more frequently; till, at last, sleep overcame him, and, when he awoke late in the morning, *every symptom had disappeared*, and he found himself as if he had been dreaming and quite well. From that time down to the present day (now five months) he has had no signs, whatever, of the distemper."

It is right to state, that, in addition to the effervescing draughts, I advised the patient, as soon as the intensity of the attack had subsided, and the inflammation had partially disappeared, to take a few grains of blue pill every other night, and in the morning, an electuary composed of sulphur and magnesia—a prescription I have found to suit the irritable and weak bowels of gouty subjects better than most others. When the latter combination was not found sufficient, an aloetic preparation was recommended to be added to the blue pill, and a slight aromatic tonic during the convalescence.

In closing these remarks, I am bound to add, that the result obtained in so old and severe a case, would appear to be greater than that which I have myself experienced hitherto, and I am induced, therefore, to ascribe the difference to a circumstance that has been before dwelt upon by me, viz., that, in Spain, many diseases are milder, and less complicated than in this country.* Not that I concur in the opinion expressed by the narrator of the present case, that a *radical cure* has been effected, if, by radical cure, he meant a total exemption, in future, from attacks of the disease. This must be apparent from a slight consideration of the subject, for if the remedy in question acts only, as I presume, by removing the cause, no matter what that cause is, whether external or intimal, the individual must always be liable to be again brought under its injurious operation, the same as before the first attacks of the disease. If, however, gout be produced, as I infer, from the presence of a morbid matter in the blood; and, if, as I still further conclude, we possess an agent capable of combining with it and rendering it innocuous, all that we require is, a certain amount of time, (varying, of course, according to the severity of the disease), and the duration of the attack and recovery of the patient, instead of depending, as heretofore, on the efforts of nature or the uncertain efforts of art, may then be calculated on with something like a certainty, while the attacks themselves, instead of continuing for months, and returning two or three times every year, will only be experienced once in two or three years, and then only continue for a few days, or weeks, I, of course, except those cases, too frequent, alas! in which structural, or organic alteration has taken place in any vital or important organ, produced, not only by the injurious, but the long-continued operation of a cause, which the science of medicine has hitherto been unable to remove with certainty and with safety.

Trusting that the history of the preceding case will prove interesting to the readers of the Medical Times, and that the result of the treatment may induce some of your numerous readers to give the remedy in question a fair trial, I have only to add, that, whatever the result of the trial may be, it will, I hope, be made public, not for my satisfaction, but, for that of a large class of sufferers, who, at present, are too generally sceptical of the efforts of art in the cure of their complaints.

I am,
Your obedient Servant,
J. Parkin.

18, Dover-street, April 3rd, 1843.

Incontinence of Urine.—M. Pitschaft. of Baden, asserts that he has cured incontinence of urine in patients of either sex by small doses of strychnine. To insure success, however, it is necessary that the bowels should be cleared before commencing the use of this remedy.

* Vide Lancet, May 12th, 1838—On the state of Medicine in Spain.

MEDICAL NEWS.

Von Bulard, a physician well known by his indefatigable exertions in examining the nature of the plague at Cairo, Smyrna, and Constantinople, died lately at Dresden. He was one of that small class of men who devote their lives to the cause of humanity, and passed days and nights with the plague-stricken, shut up with the wretched sufferers, when all others fled. The result of his investigations appeared in a work published in Paris in the year 1839, and entitled, "De la Peste Orientale d'apres les materiaux recueillis á Alexandre, et Caire."

The Academy of Sciences has at length filled up the vacancy occasioned by the death of Baron Larrey, by the election of M. Velpeau.

Dr. O'Shaughnessy has been recently elected a Fellow of the Royal Society.

The Paris Society of Medicine will give a prize of 500 francs for the best essay on the on the employment of Ioduret of Potassium in Syphilitic Diseases. The 1st of October is the last day for receiving the essays.

TO CORRESPONDENTS.

A New Subscriber.—*The combination mentioned will doubtless produce an* insoluble *precipitate of "percyanide of iron." We cannot at once say how it could be kept in suspension, as mucilaginous substances would be hardly compatible. We do not know the tincture carbonate iron,—we presume the tinctura ferri sesquichloridi is meant. The most useful works to consult would be Brande's Manual, (Parker, West Strand,) and Turner's Chemistry (John Taylor, 30, Upper Gower Street.)*

Duties on Drugs.—*In explanation to numerous correspondents, we append the following statement of duties imposed on drugs, and which should be* added *to the market prices given last week.* 20 *per cent is paid on cowries,* 1*d. per aloes, lb. for (of British produce) for Canada balsam, jalap, orange flower water, pink root, sarsaparilla, senna, sponge (of British produce) tamarinds, and verdigrease,—*1*d. per cwt. for British oak bark,* 2*d. per lb. for foreign aloes, anchovies, tolu balsam, cardamoms, and essential oil of almonds;* 3*s. per lb. for Peru balsam, refined camphor, China root rhubarb, foreign tamarinds and vermillion;* 3*d, per oz. for grey ambergris;* 5*d. per cwt. for borax, beracic acid, and sassafras root;* 6*d. per lb. for cantharides, French capers, chillies, scammony;* 6*d. per oz. for sulphate of quinine;* 2*s. per lb. for alum;* 2*s. per cwt. for foreign unbleached wax, foreign brimstone, antimony;* 2*s. per gallon for olives;* 4*s. per cwt. for angelica root, capivi balsam;* 1*s. per lb. for colonial arrow root, the essential oils not before named, opium, saffron;* 10*s. per cwt. for Dutch camphor, carraway seeds, quassia, saccharum saturne;* 5*s. per cwt. for British isinglass, foreign aniseed, orris root, foreign turmeric;* 5*s. per lb. vinellocs;* 5*s. per ton for Terra japonica, colonial black lead, gentian root, valonia, English weld for foreign tumeric;* 3*s. per cwt. for foreign glue;* 15*s. for guinea grains,* ½*d. per gallon for juice of lemon;* 2*s.* 6*d. per lb. for nux vomica;* 25 *per cent. on spermaceti;* £2. 16*s. per cwt. for Naples soap;* £1. 10*s. per cwt. for Castile soap;* 1*s.* 3*d. per cwt. for castor oil; the rest in the list* 1*s. per cwt.*

Mr. Kent.—*We saw the number.*

Mr. Perry.—*The numbers will be sent and the bill forwarded.*

Medicus *will observe that the duty is to be added to the prices marked. Other correspondents are requested to notice the same circumstance. We are not acquainted with the wholesale druggists' prices to their country customers.*

A Looker on.—*We will publish the letter if we are informed of the writer's name.*

Mr. Booth, of Sheffield, *does not receive his number from our office.*

X. Y. Z.—*We should think the recently published, or promised book, of Mr. Pilcher would be at the present day the most* useful, *but can give no positive opinion.*

Mr. Harrison's *note has been placed in an agent's hands, from whom our correspondent will shortly hear.*

A Subscriber.—*There is no fixed period for the publication of Pharmacopœias. We do not hear that one is now in preparation.*

H. M. B.—*Copaiba, magnesia, in the proportions two of first to one of the latter triturated, and added to a quart of spirit of wine, with two ounces of nitrous æther, is the received formula for making Frank's Solution of Copaiba.*

Mr. Brookes.—*Our space belongs not to us, but to our readers; and it is a rule, we believe, with every Journal, that replies should be published by the same medium in which the attacks that provoke them appeared. A controversy, or rather an altercation, on such a subject, and so conducted (our correspondent will understand us) is what we should decline under any circumstances. It would neither better* feelings *nor improve science.*

Probe's Brilliant Pencillings *next week.*

THE MEDICAL TIMES.

SATURDAY, APRIL 15, 1843.

"Vos humili asseclæ, vos indulgebitis unquam
Cultori, jam nec morbo donare parati."

WE beg to call especial attention to the following letter from Mr. Guthrie:—

To the Editor of the "Medical Times."

SIR,—In March, 1842, I addressed a letter to the surgeons of the London Unions, who had called on me as the then President, and on the Vice Presidents of the Royal College of Surgeons, stating my views respecting the Medical Order of the Poor Law Commissioners of the 12th of that month, regulating the payments to be made to the medical officers of unions for *extraordinary* services, which letter you were pleased to publish. You also thought it right to make known a second letter I addressed to the same gentleman on the subject of an arrangement I hoped I had made with the Secretary of State and the Poor Law Commissioners, with respect to certain fixed payments for the ordinary services of the medical officers of unions, and which I was led to apprehend would have formed a part of the amended Bill about to be laid before Parliament.

The difficulties and alarm under which the country, and particularly the agricultural part of it, have been, for some time labouring, will, I fear, prevent the accomplishment of this object, which is so much desired by the members of the medical profession, unless the sense of the House of Commons should be strongly expressed upon it. In order to obtain this, it is necessary that a clear and accurate statement of the sufferings of the sick poor should be laid before it, and of the grievances which medical men sustain under the authority (but I am firmly convinced against the wishes) of the Poor Law Commissioners, which prevent their being able to give these unhappy persons that assistance which their state demands and deserves at the hands of their more fortunate neighbours.

Colonel Wood (Middlesex) has moved for such returns (and will move for more if necessary) as will enable him to bring this matter under the consideration of the House of Commons as soon as the amended Bill shall be presented. To enable him to do this effectually, a statement must be furnished to him of all the sufferings and grievances above alluded to; and if the members of the medical profession who have suffered, and are suffering, or are aggrieved, shall be pleased to address their statements to me, I will prepare such a digest of them as will enable him and the House of Commons to understand this subject.

I shall be careful in attending to the different facts confided to me, not to mention either names or places, and those who may think fit to send them may rely on my discretion.

I shall be obliged by your giving insertion to this letter, and have the

Honour to be, Sir,
Your very obedient Servant,
G. J. GUTHRIE.

Berkeley Street Bekeley Square,

April 11 1843

If we felt no little pleasure last year, in announcing the pledge given to Mr. Guthrie by Mr. Lewis and Sir James Graham, that the whole system of Poor Law Medical remuneration should be efficiently amended, our regret is proportionately high now, that we have to hear that the hopes then raised run so great probability of being disappointed. The evils of the present Poor Law system of paying medical men have been exhibited with all the force of a mathematical axiom. It has been proved by figures which no man can mistake, that Boards of Guardians are receiving the services of Doctors for a price which, so far from renumerating them for their skill as members of a liberal profession, or for the time and labour they expend (which, as parochial officers, cannot be inconsiderable), does not pay the wholesale price of the drugs which they are bound to administer. The deductions from this one fact are obvious. That a bargain of this kind, considered without reference to any *effects* it may have, is dishonourable to a Board of Guardians, and dishonouring to a medical officer, is what no man can doubt. If the fierce competition arising from a superabundance of practitioners, disposes the less fortunate of them to take any terms that are offered, the more disgraceful to a Board of gentlemen to take advantage of the circumstance, and accept from needy men services, which, while something *cheaper* than gratuitous, degrade into disrespectability a profession it is the interest of the State and humanity to sustain in credit and honour. But though this be a great, it is far from being the greatest evil of these parsimonious arrangements. It is said of excise duties, that, whoever pays them first, they fall in the end on the consumer. Of these *savings* we may say similarly, that the poor pay for them. We know the benevolence of our profession,—we know how the majority of its members are honourably distinguished in town and country for the alacrity and self-devotion they ever exhibit, when sudden or extraordinary calamity or distress calls for their sympathy or aid,—but there can be no service answered in disguising the fact, that the great bulk of medical men who can descend to accept a grossly-inadequate repayment for their services, will never, can never, *permanently* consent to bear exclusively the whole losses of the disgraceful bargain they have been compelled to make. The sense of injury—the consciousness of violated justice—the still but ceaseless voice of interest—the conviction that the wrong, whoever suffers it, originates in the miscalled *Guardians* of the poor,—all these considerations cannot but have their weight in tempting to neglect, when neglect (while only a problematic injury to the *poor*) is a certain gain to *them*. Human nature, after the best that can be said or made of it, is still not the nature of a deity. The justice which is inflexible under all circumstances, is an attribute of few men; and mid the sophistries of the intellect, and the impulses of the feelings, to place a man

in poverty in a constant struggle with circumstances, in which rectitude is constant loss, and dishonesty constant gain, is, in ninety-nine cases in the hundred, to be the necessary authors of moral wrong. This, we have no hesitation in maintaining, is the position, under the present law, of many of our Boards of Guardians; *with this addition*—that, in the wrong they thus necessitate, is involved also the comforts, healths, *lives*, of our English poor.

With such an enormously bad arrangement, so essentially evil, and so demonstratively convicted, we could of course feel little difficulty in giving credence to Mr. Guthrie's assurance that the agents of Government would, as they promised, early give us and the public an effectual remedy. We were too credulous. Sir James Graham has already made known the retractation of his design to improve: and again shewn that if any politician of the present day is to remove Statesmen's promises from the same category as "lovers' vows and dicers' oaths," he is not Sir James Graham.

With such good matter to back us, however, we can afford to see politicians play false to us, if we only play true to ourselves. Mr. Guthrie has done his duty to us in his own manly way. Sir James has deceived him and us, and he announces the fact on the earliest occasion. That alone, if we were not apathetic to a degree which should excites as much pity as wonder, would suffice: but the worthy veteran has marked out the plan of campaign with a skill of generalship that guarantees success, if he be ably supported. Let statements be poured forthwith into Mr. Guthrie's hands: used as he engages to use them, they cannot but do great good. The assistance he offers is timely—and cannot be too highly appreciated. He offers a centre of action: in grthering round it we gain the stregth we give. But let us not stop here. Let every man who has influence personally with Members of Parliament at once address them—and every constituent, with or without personal acquaintance, take a speedy and sure means of making known his sentiments to his representative. A *due* movement just now will win us a social boon, which will make both the poor and the profession our debtors for a half-century.

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

Pulmonary emphysema.—According to M. Cocchi, pulmonary emphysema consists in the diminution or suspension of the action of the organic phenomena proper to the pulmonary cells, with dilatation and loss of elasticity in their walls. Their rupture is a rare occurrence; and it is still more uncommon to find air infiltrated into the inter-lobular cellular tissue. He distinguishes emphysema into two kinds; the *protopathic* and the *deuteropathic*. The first arises from some power applied directly to the diseased organs; the second from affections ordinarily chronic in the lungs, the heart, the large vessels or other viscera. Secondary emphysema is sometimes produced by acute bronchitis; at other times, it accompanies it. Emphysema shows itself in severe fevers, especially those in which the venous system has been primitively attacked. It also develops itself after poisoning by narcotics (hemlock, aconite, belladonna, stramonium, &c.) The increase in size of the lung, and the consequent aggravation of the emphysema, lead to the augmentation of the catarrh and *bronchitis*: and this, once developed, leads in its turn to the suffocating catarrh which kills the patient. In emphysema depending on disease of the venous system of the liver, the spleen, &c., the preparations of aloes and rhubarb, bitters, ferruginous salts, leeches to the anus, dry frictions, and removal to a healthy atmosphere, are especially to be recommended. Where the emphysema is dependant on other diseases, we must first of all direct our attention to those affections.

Extraordinary Congenital Transposition of the Abdominal Viscera in the Thorax. By M. Forlivesi.

A man, 42 years of age, who had never ailed beyond two slight indispositions accompanied with vomiting, entered the hospital on the 26th Sept. 1840 in the following state. Great prostration, anxious face, constant vomitings of a watery matter, lancinating pain in the epigastrium, great retraction of the abdominal parietes, marked elevation of the chest, constipated bowels, rapid, contracted, and resistent pulse. These symptoms had commenced two days previously, and had gone on augmenting in spite of two blood-lettings. A shivering fit subsequently occurred and the patient rapidly sunk. On raising up the abdominal parietes, the omentum, the stomach, the greater part of the intestinal canal and the spleen, were missing. The diaphragm was convex downwards on the left side; and its posterior attachments were lower down than usual. On the inferior surface of the muscle was found a sac of the size of the adult fist, containing a part of the stomach acutely inflamed, and having blackish spots scattered over it. On carefully opening the chest, the left pleural cavity was seen to contain the omentum, the stomach, the spleen, and the intestines. The œsophagus on arriving near the opening of the diaphragm, became twisted on itself so as to close up the passage, adhering to the fibres surrounding it, and then passing onwards to the stomach. This latter viscus, partly fixed in an opening (an inch and a half in diameter) in the left tendinous portion of the diaphragm, had become strangulated, exhibiting along its external surface a gangrenous groove. The descending colon escaped out of the chest through the same opening, and passed in a straight line along the vertebral column to the anus. All these organs were destitute of their peritoneal covering, and were placed between the pulmonary and the costal pleuræ. The thoracic viscera were all contained in the right pleural cavity; the left lung was reduced to a third of its natural size, but was unaltered in texture or appearance. The heart, inclined to the right, was a little smaller than usual. The right lung occupied the posterior part of this cavity. The liver and pancreas were in their normal situation; the choledic and pancreatic canals had increased in length and changed their direction. They passed between the fibres of the diaphragm to open, as usual, into the duodenum. The arterial branches directed to the stomach, to the spleen and the intestines, passed into the thorax in a similar manner to reach those viscera.

Perforation of the Intestine by Lumbrici. By M. Coppola

A child, nine years of age, of habitual good health, was seized with acute pains, and presented a painful tumefaction on the left side of the umbilicus, with loss of appetite and shivering fits followed by perspiration. The health declined more and more, when M. Coppola made an incision into the tumour which presented an obscure fluctuation. A little reddish serosity escaped containing two *lumbrici*. In the course of a few days; 45 of these worms were extracted, of variable sizes and all living. A stercoral fistula became established, and the patient gradually recovered.

Antidotes to certain Mineral Poisons.—According to the experiments of MM. Sandras and Bouchardat, the best antidote to corrosive sublimate is the hydroguret of iron. But as there is great difficulty in preserving this substance, the authors think that the persulphuret of the hydrate of iron is preferable. In poisoning by the acetate of copper, they recommend the administration of the persulphuret of the hydrated peroxide of iron. Given even after an interval of forty minutes, when the symptoms of poisoning had already commenced, this preparation has sufficed to check their progress. With regard to the salts of lead, the authors have instituted no experiments, having seen dogs get well without any especial treatment after the administration of this class of poisons. The antidotes to arsenious acid are the peroxide of iron and the persulphuret of the hydrated peroxide of iron. This latter substance is thus found to be suitable to many different kinds of poisoning. It is, therefore, a very valuable preparation; for it may always be administered, even where we are doubtful as to the nature of the poison. So that the frequently unavoidable incertitude as to the diagnosis will have but little influence over the efficacy and promptitude of the treatment.

On the Action of Electricity in Organic Diseases of the Eye.—M. Demarchi states, that the zinc pole of the pile produces, upon the point of the cornea where it is applied, a white and opaque spot; if the current is stronger, the tissue becomes cauterised. He explains these effects by the condensation of the albumen. The crystalline lens does not become opaque under the action of the zinc pole; it is, however, doubtful, whether a stronger current might not induce some change. The copper pole changes the nature of the stain produced by the zinc pole, but does not entirely destroy it. In this action, the wire of the copper pole becomes blackened, perhaps in consequence of a deposit of carbon, which takes place on its surface. He, therefore, concludes that it is more easy to produce opacity of the cornea by the aid of electricity than to destroy it by means of the same agent.

Prussic Acid.—M. Bonjean states that according to his experiments, animal substances when distilled in a sand-bath, at a temperature of 100 to 120 degrees, will sometimes furnish a small quantity of prussic acid combined with ammonia. The formation of this product, like that of all those depending on organic decomposition, may be modified by the circumstances in which it is placed, by the nature and mode of employment of the reagents used to demonstrate its existence, and by the degree of putrefaction of the substances subjected to analysis. This is so much the case that, in a great number of experiments, the author has succeeded but once in obtaining, with the sulphate of copper, the red coloration, and subsequent chesnut-brown precipitate, which can depend on the cyanuret of copper alone. In legal medicine, however, it is necessary, before affirming the existence of prussic acid, to subject this precipitate to still further operations so as to set free the cyanogen and thus verify the nature of this latter body in an incontestable manner.

Acute Neuralgia in several branches of the Cervical Plexus, cured by Sub-Cutaneous Neuro-Myotomy. By M. CASIMIRO.

A young lady had for six years been labouring under painful contractions of the muscles on the right side of the neck, of a most acute character, and which had resulted in the production of wry-neck, with shortening of almost all the muscles in this region. The contraction of the affected muscles was perfectly independent of the will of the patient, nor could the action of the antagonists at all prevent the movement produced by these spasms. Antiphlogistics, revulsives, narcotics, as well as mechanical means, had been employed without advantage. The following operations were, therefore, determined on, each being performed at distinct periods. On the 22d January, a section was made of the clavicular portion of the *trapezius* at its superior extremity, and of the *sterno-cleido-mastoideus* at its inferior and sternal extremity.—Feb. 15, section of the *sterno-cleido-mastoideus* at both its sternal and clavicular attachments, the involuntary spasmodic pains and contraction having still persisted.—March 23, section of the *sterno-cleido-mastoideus* near its superior insertion, on a level with the angle of the jaw.—June 22, section of the *trapezius*, the *rhomboideus*, and the *levator anguli scapulæ* made by a single puncture at the lower part of the neck.—July 10, renewed section of the *trapezius* in the neck. After each operation the painful contractions ceased in that part of the muscle corresponding to the line of incision. During the intervening period, the patient wore some simple apparatus to prevent the immediate re-union of the divided muscles. The natural form and movements of the part were restored and the painful spasms entirely left her.

The above appears rather to be a case of painful and spasmodic contraction of the muscles of the neck inducing *torticollis*, than one of neuralgia, properly so called.

On the Employment of the Preparations of Silver in Syphilis. M. Salvolini speaks in high terms of the preparations of silver in syphilitic affections. He considers them to be less irritating to the stomach and the lungs than mercury and gold, while they possess a further advantage over these medicines in not exciting salivation, as well as in being cheaper than the latter metal. Like M. Serre he prefers the chloruret and the ammoniacal chloruret to the oxide, the ioduret, or the cyanuret of silver, as well as to the simple metal in a state of minute division. The following are his usual formulæ: chloruret of silver, 1-10th of a grain, to be rubbed upon the tongue. This friction to be repeated four or five times a day. Ulcers and vegetations are to be dressed with an ointment made of oxide of silver. Of the ioduret of silver he gives 1-10th of a grain in the form of a pill five times a day. At the end of six days, he increases the quantity to 1-6th of a grain, to be given four times a day. Of the cyanuret, or of the ammoniaco-chloruret of silver, the dose is 1-10th or 1-8th of a grain in each pill.

Case of Hydrophobia originating under peculiar circumstances. By M. CRESCIMBENI.

A soldier lately died from this distressing malady under the observation of the author of this memoir. After his death, his comrades stated that he had been for some time aware of his condition, but that he was afraid of speaking lest he should be put to death. This man had been imprisoned some time previously for a breach of discipline. During his confinement, he caused his penis, upon which some chancres existed, to be licked by a dog which was shut up as suspected of hydrophobia. A few days afterwards, the dog became decidedly rabid, and was killed.

M. Crescimbeni suggests the following reflections upon this case.—1st. That these two kinds of *virus* existing upon the same point, do not possess the property of neutralising one another, as hitherto imagined.—2. That the saliva of rabid dogs is contagious before the disease becomes general, and while the animal is still docile and attached to its master.

Vinegar Poultice in White Swelling.—M. Gamberini speaks to the great benefit derived from this poultice, not only in white-swelling but also in local rheumatic affections, sprains and severe bruises. It is prepared by boiling for half an hour, in a closed vessel, a mixture of bran and strong vinegar. It is then to be spread on linen, like an ordinary poultice. A constant phenomenon resulting from its employment is an eruption of granulations which frequently become ulcerated, but shortly afterwards heal up again.

Syphilis in Pregnant Women.—The following are M. Vannoni's conclusions on this subject:—1st. Syphilis existing in a female before the moment of conception predisposes her to abortion or miscarriage.—2d. Syphilitic infection provokes uterine contractions, and leads to such modifications in the body of the fœtus as to bring about its separation from the mother.—3d. In infection anterior to the period of conception, the signs of miscarriage commence towards the middle of the fourth month, and the child is generally born between the end of the sixth and the commencement of the eighth month.—4th. The employment of mercurials is the best means of preventing these results.

On Revaccination.—During a late epidemic of variola which took place in Italy, M. Tommasini directed his attention in an especial manner to this subject; and he found that those individuals attacked with variola after having been vaccinated were chiefly adults, or, at least, persons vaccinated some years previously. When the disease appeared in children but recently vaccinated, it exhibited very mild characters, or else was confined to a simple attack of *varicella*. He has frequently seen children, while dwelling in the same chamber with persons labouring under variola, altogether escape the disease. From these facts, he concludes that the preservative influence of the vaccine matter extends but to ten or twelve years. Hence the necessity of performing revaccination at the end of this period.

In a memoir just presented to the Academy of Medicine on the *Influence of Poisoning by Arsenious Acid upon the Urinary Secretion*, M. Delafond states that he has been induced to enter into this subject on account of the difference in the results obtained by the experiments of MM. Flandin and Danger, as compared with those of M. Orfila. He commenced his researches by determining the normal quantity of urine contained in the bladder of animals deprived of drink for a certain period. In his experiments he fixed an artificial bladder so as to communicate with the urethra; he then emptied the urinary bladder of the animal by pressure from the interior of the rectum. 60 *grammes* (℥ij) of arsenious acid being given to a horse, the animal died in 36 hours. In this, as well as in all his other experiments, a secretion of urine took place, and it always contained a remarkable quantity of arsenic. From these researches, M. Delafond concludes that, in poisoning by arsenious acid, the urinary secretion is not suppressed. It is, however, greatly diminished; for setting down the normal quantity furnished during 24 hours at 100; this quantity is, according to him, reduced to 29 in the horse, and to 17 in the dog, when labouring under the effects of this poison.

INGREDIENTS OF STAMPED AND PATENT MEDICINES.

(*According to Dr. Paris and other Authorities.*)

Court Plaster.—Sticking Plaster. Black Silk is strained and brushed over ten or twelve times, with the following preparation. Dissolve ℥ss. of Benzoin in f℥vi of rectified spirit; in a separate vessel dissolve ℥j. of Isinglass in water; strain each solution, mix them, and let the mixture rest, so that the grosser parts may subside; when the clear liquor is cold, it will form a jelly, which must be warmed before it is applied to the silk. When the plaster is quite dry, in order to prevent its cracking, it is finished off with a solution of terebinth. chia. ℥iv. in tinct. benzoes f℥vj.

Corn Plaster.—The green coloured plaster sold under this title is usually composed of three parts of wax, four of Burgundy pitch, and two of common turpentine; to which is added one part of verdegris.

Barclay's Antibilious Pills.—Take of the extract of colcynth ʒij., resin of jalap (extract jalap) ʒj., almond soap ʒjss., guaiacum ʒiij., tartarized antimony, grs. viij., essential oils of juniper, carraway, and rosemary, of each gtt. iv., of syrup of buckthorn, as much as will be sufficient to form a mass, which is to be divided into sixty-four pills.

Refined Liquorice.—This article, which is sold in the form of cylinders, is made by gently evaporating a solution of the pure extract of liquorice with half its weight of gum arabic, rolling the mass, and cutting it into lengths, and then polishing, by rolling them together in a box: many impurities, however, are fraudulently introduced into this article, such even as glue, &c.

Aromatic Lozenges of Steel.—These consist of sulphate of iron, with a small proportion of the tincture of cantharides.

Forge Water.—This remedy, says Dr. Paris, as a lotion for aphthæ and other similar diseases, I am well satisfied possesses considerable efficacy. It may, perhaps, be necessary to state, that forge water is that in which the blacksmith has plunged his hot iron, for the purpose of refrigeration. It is to be taken early in the morning, when all the mechanical impurities having had time to subside, it is beautifully limpid. Upon examining some of this water, I found it to contain sulphate of iron. The sulphuric acid was probably derived from the sulphur of the coals.

Mathieu's Vermifuge.—This consisted of two distinct electuaries, the one for *killing*, the other for *expelling* the tape-worm. The former of these was composed of an ounce of tin filings, six drachms of the fern root, half an ounce of the semina santonici, a drachm of the resinous extract of jalap, and of sulphate of potass, and a sufficient quantity of honey to make an electuary, of which a teaspoonful was taken every three hours for two days; after which the latter electuary was given in the same dose, and consisted of two scruples of powdered jalap, and sulphate of potass, one scruple of scammony, and ten grains of gamboge, made into an electuary with honey. The inventor of this receipt received the title of Counsellor of the Court, as well as a large pension for life, from the King of Prussia, for making it public!

Brodum's Nervous Cordial consists of the tinctures of gentian, calumba, cardamom and

bark, with the compound spirit of lavender, and wine of iron.

Stroughton's Elixir is a tincture of gentian, with the addition of serpentaria, orange peel, cardamoms, and some other aromatics.

Pectoral Balsam of Liquorice.—The proprietor of this nostrum gravely affirms that f℥iss contains the virtues of a whole pound of liquorice root; but upon investigation it will be found to consist principally of paregoric elixir, very strongly impregnated with the oil of aniseed.

The Chelsea Pensioner. — An empirical remedy for the rheumatism is well known under this name; it is said to be the prescription of a Chelsea pensioner, by which Lord Amherst was cured; the following is its composition—Gum Guaiac ʒj., powdered rhubarb ʒij., cream of tartar ℥j., flowers of sulphur ℥j. one nutmeg finely powdered; made into an electuary, with one pound of clarified honey. Two large spoonfuls to be taken night and morning.

Walker and Wessel's Jesuit Drops.—This is nothing more than the elixir anti-venereum of Quincey, consisting of guaiacum, balsam of copaiba, and oil of sassafras, made into a tincture by spirit.

Hatfield's Tincture.—Guaiac and soap, equal parts, ʒij., rectified spirit oiss.

Hill's Essence of Bardana.—Guaiac ℥j., spirit f℥iij.

Matthew's Pills—Starkey's Pills.—Of the roots of black hellebore, liquorice, and turmeric, equal parts, purified opium, castille soap, and syrup of saffron, the same quantity, made into pills with oil of turpentine.

Bacher's Tonic Pills.—These are composed of equal parts of the extract of hellebore and myrrh ℥j., with ʒiij. of powdered carduus benedictus: which are made into a mass, and divided into pills, each weighing one grain; from two to six of which may be given three times every day, according to the effects they produce.

Gowland's Lotion.—Is a solution of sublimate in an emulsion formed of bitter almonds, in the proportion of about gr. jss. to f℥j. A solution of this mercurial salt in spirit of rosemary, is also sold as an empirical cosmetic.

Norton's Drops.—A disguised solution of corrosive sublimate.

Ward's White Drops.—This once-esteemed anti-scorbutic was prepared by dissolving mercury in nitric acid, and adding a solution of carbonate of ammonia; or frequently it consisted of a solution of sublimate with carbonate of ammonia.

Spilsbury's Anti-Scorbutic Drops.—Of corrosive sublimate ʒij., prepared sulphuret of antimony ʒj., gentian root and orange peel, equal parts ʒij., shavings of red saunders ʒj., made with a pint of proof spirit into a tincture, which is to be digested and strained.

"*The Anti-Venereal Drops,*" so famous at Amsterdam, were analysed by Scheele, who found that they were composed of muriate of iron, with a small proportion of corrosive sublimate.

Marsden's Anti-Scorbutic Drops.—A solution of sublimate in an infusion of gentian.

Green's Drops.—The basis of these also is sublimate.

Solomon's Anti-Impetigines.—A solution of sublimate.

Rob Anti-Syphilitique, par M. Laffecteur, Medicin Chemiste. This popular nostrum of the French contains as a principal ingredient, corrosive sublimate. A strong decoction of the arundo phragmitis (the bull rush) is made, with the addition of sarsaparilla and aniseeds towards the end, which is evaporated, and made into a rob, or syrup, to which the sublimate is added. (This is much questioned.)

Sirop de Cuisiniere.—This consists of decoctions of sarsaparilla, burrage flowers, white roses, senna, and aniseed, to which sublimate is added, and the whole is then made into a syrup with sugar and honey.

Terre Feuilletee Mercurielle of Pressavin.—This is tartarised mercury, for it is made by boiling the oxyd of mercury (obtained by precipitating it from a nitric solution, by potass) with cream of tartar.

Velno's Vegetable Syrup.—There has been a great obscurity with respect to the genuine composition of this nostrum; it has generally been supposed to consist of sublimate rubbed up with honey and mucilage. I have lately received says Dr. Paris from Mr. Brodie, a formula, by which a medicine perfectly analogous in its sensible characters, and medicinal properties, to the syrup in question, may be prepared; and I am assured that, wherever it has been tried, its effects are in every respect similar to those produced by the original nostrum. Take of Burdock root (young and fresh) sliced ℥ij., dandelion root ℥i., spear mint (fresh) ℥j., senna leaves, coriander seeds (bruised,) liquorice root (fresh) of each ʒiss. Water oiss.; boil gently until reduced to oj., then strain, and, when cold, add 1 lb. of lump sugar, and boil it to the consistence of a syrup, and add a small proportion of the solution of oxymuriate of mercury. Swediaur says that volatile alkali enters into this nostrum as an ingredient; this alkali was proposed by Dr. Peyrile, as a substitute for mercury, and it constitutes the active ingredient of the following composition, which was proposed by Mr. Besnard, physician to the King of Bavaria.

Tinctura Antisyphilitica.—Sub-carb. potass. lbj. dissolved in aq. cinnam. oj. opii puri ℥ij. dissolved in spir. cinnamom. f℥iv. mix these separate solutions, and put them on a water-bath for three weeks, taking care to shake the vessel frequently; to this add gum arabic ℥ij. carb. ammoniæ ℥j, dissolve in aq. cinnamomi; mix, filter, and keep for use. Dose, twenty four drops, three times a day, in a glass of the cold decoction of marsh mallow root.

The external use of these drops is also advised for local syphilitic complaints!

Worm Medicine.—Many of the nostrums advertised for the cure of worms, contain calomel as their principal ingredient, combined with scammony, jalap, gamboge, or some other purgative; they are uncertain and dangerous medicines; the method of exhibiting them in the form of lozenges (worm cakes), is also attended with inconvenience, for the sugar and the gum generating an acid, by being kept in damp places, may considerably increase the acrimony of the mercury; besides which, the calomel is frequently diffused very unequally through the mass; one lozenge may, therefore, contain a poisonous dose, whilst others may scarcely possess any active matter.

Ching's Worm Lozenges.—These consist of yellow and brown lozenges, the former are directed to be taken in the evening, the latter the succeeding morning.

The Yellow Lozenges.—Take of saffron ʒss. of water oj., boil and strain; add of white panacea of mercury (calomel washed in spirit of wine) lbj. white sugar 28lb., mucilage of Tragacanth as much as may be sufficient to make a mass, which roll out of an exact thickness, so that each lozenge may contain one grain of panacea.

The Brown Lozenges.—Panacea ℥vij. resin of jalap 1 lb. iijss. white sugar 1 lb. ix. mucilage of tragacanth q. s., each lozenge should contain gr. ½ of panacea.

Story's Worm Drops.—Calomel and jalap made into cakes, and coloured with cinnabar.

Ward's Essence for the Head-ache.—Nothing more than liniment. camph. comp.

Steer's Opodeldoc.—Castille soap ℥j., rectified spirit, f℥viij., camphor ʒiiiss, oil of rosemary fʒss., oil of origanum fʒj, solution of ammonia fʒvj.

Bates's Anodyne Balsam.—It consists of one part of tincture of opium, and two of opodeldoc, i. e. liniment, sapon. comp.

Freeman's Bathing Spirits.—Liniment. saponis comp. coloured with Daffy's Elixir.—Jackson's Bathing Spirits differ from the former in the addition of some essential oils.

Lynch's Embrocation.—Olive oil impregnated with bergamot and some other essences, and coloured with alkanet root.

Knox's Powder.—This consists of eight parts of muriate of soda, and three parts of chloride of lime. By adding a tumbler of water to an ounce of it we obtain a solution similar to Labarraque's Solution of the Chloride of Lime.

Hannay's Lotion, or Preventive Wash.—This famous nostrum for the prevention of venereal infection, was nothing more than a solution of caustic potass.

Dr. Chittick's Remedy for the Stone.—This celebrated nostrum consisted of a fixed alkali in veal broth; the broth was usually made by his patients, and sent to him fresh every day, in order to be medicated.

Honey Water. — The article usually sold under this name is a mixture of essences coloured with saffron; some add a small quantity of honey, the effect of which is to communicate a clamminess which retains the scent longer.

Essence of Peppermint.—A spirituous solution of the essential oil, coloured green by spinach leaves.

Oil of Bricks.—So called because this empyreumatic oil was sometimes obtained by steeping hot brick in oil, and submitting it to distillation.

Roche's Embrocation for the Hooping-Cough.—Olive Oil mixed with about half its quantity of the oil of cloves and amber.

Struve's Lotion for the Hooping Cough.—This once-famous nostrum consisted of ʒj. of tartarised antimony, dissolved in f℥ij. of water, to which was added f℥j. of tincture of cantharides.

Essence of Bitter Amonds.—The preparation sold under this name, for the purposes of perfumery, &c., consists of one part of this essential oil, and seven parts of rectified spirit.

Cough Remedies.—Opium is the quack's sheet anchor. The various nostrums advertised as "Cough Drops, for the cure of colds, asthmas, catarrhs, &c.," are preparations of opium very similar to paregoric elixir. Pectoral Balsam of Liquorice and Essence of Coltsfoot are combinations of this kind—Grindle Cough Drops are a preparation of the same description, only made with rectified instead of proof spirit, and consequently more highly charged with stimulant materials.

Squire's Elixir.—Opium, camphor, serpentaria, sub-carbonate of potass, anise and fennel seeds, made into a tincture, and coloured with cochineal.

Toothache.—Severe attacks of toothache are often experienced by pregnant women, but no operation should be performed, however urgent the symptoms; the pain and inflammation should be relieved by leeches to the gums, stimulants and anodynes. Creosote sometimes does good. In a case which recently occurred, violent toothache took place without any obvious cause, a few days before the period of quickening, and the pain ceased the instant the movements of the child were felt.

SPONTANEOUS RUPTURES OF THE STOMACH.

The symptoms of these grave accidents, around which so much obscurity has till lately hung, have at length been in a great measure unveiled by M. Laurent, in a treatise which occupies a considerable space in the *Archives Generales de la Medicine.* The fatal character of the disease, the rapidity with which, in most cases, it is followed by dissolution, the distressing symptoms with which it is accompanied, and their great analogy with the symptoms which accompany the effects of various poisons, are circumstances which not only give considerable interest to the subject, but render an acquaintance with it highly necessary to the medical jurist and practitioner. The fact that the stomach is liable to spontaneous perforations has been known from the time of antiquity; but the pathological causes of the fact have been the ground of much and conflicting speculation with both ancient and modern physicians. Galen, Alexander of Tralles, Cœlius Aurelianus, Boerhaave, Van Swieten, and Hoffman thought that ruptures of this organ depended on the acridity, alkalinity, or other abnormal state of its proper humours; and Hunter himself considered them as owing to an altered state of the gastric juice, in which opinion he was followed by Burns, Adams, Baillie, &c., as in our day he has been by Wilson, Philip, and Carswell. Some of the French physiologists, however, as Morin, Gerard, &c., especially the latter in his dissertation *des Perforat. de l'Estomac, Paris*, 1803, afterwards denied that ruptures of the gastric membranes occurred from the action of the gastric juice, unless they had been previously altered and rendered less able to resist its effect by disease. Jæger held a medium opinion, attributing, indeed, the perforation of the stomach to the chemical effect of the gastric juice, in which he supposed acetic acid to have become predominant, but considering the organ itself to have been predisposed to lesion not so much from an alteration of its tissues as from a deficiency of innervation, it having lapsed into a kind of paralytic state, which of itself determined the altered state of the fluids. A gelatiniform softening of the stomach was recognized by both himself and Dr. Camerer, of Stuttgard, which he supposed to proceed from the action of a gastric juice in which acetic acid prevailed. In 1818, Chaussier particularised the differences usually observed in the perforations, as well as their ordinary place of occurrence in the viscus, and the article *Perforation* in the *Dict. des Sciences Medicales*, which appeared in the following year, distinguishes ruptures of the stomach into three kinds—those produced by external causes, gangrenous perforations induced by inflammatory or schirrous diseases, and perforations by erosion. Louis, Richter, Becker, Ebermaier, Andral, and many other authors followed on the same subject, each with his own classification of the causes producing the accidents in question; but no materials for the basis of a very copious history of such lesions of the stomach appear to have been obtained till M. Lefevre made it his business to collect them. We shall, therefore, recount a few particulars of the most striking cases reported by him, and afterwards proceed to give a short general view of the inferences thence deduced.

Case 1.—Madame —, forty-four years of age, and usually in the enjoyment of good health, a few hours after her dinner, which consisted chiefly of bouilli, green peas, and lettuce sallad, experienced an acute pain in the epigastric region, "as if the stomach were tightly compressed by a cross-bar." As she had occasionally been subject to transient pains of a similar character in the left hypochondrium, she attached little importance to this symptom. Soon, however, nausea and vomiting of a frothy matter supervened, though no portion of the meal taken last was thrown up. For a short time the patient was free from pain, but this returned at intervals during the night, and early in the morning her daughter was terrified to find her sitting on the floor in great apparent suffering. Tea and similar drinks were rejected again as soon as taken. In this state, M. Lefevre first saw the patient; her pulse was slow and weak, but regular; hand rather cool; tongue pale, though moist; little thirst. An anti-spasmodic mixture ordered, the chief medicament of which was tinct. opii. with warm anodyne poultices to the epigastrium. At eight o'clock, a. m., (two hours afterwards) M. Lefevre was summoned in haste, the patient experiencing the most intense pains, and incapable of supporting the weight of the poultices. She felt threatened with suffocation by an intolerable weight at the bottom of the chest, and rolled about on her bed unable to maintain any permanent position. Nausea was produced by swallowing the least quantity of liquid, which was immediately rejected by an act rather of regurgitation than vomiting; the stomach expelled none of its contents. Pulse slow, hard, and feeble; face pale and expressing suffering and anxiety; surface cold and discoloured. Much hardness of the abdomen and swelling in the splenic region; the patient, however, stated that for many years preceding she had frequently been subject to the transient occurrence of this symptom. Ordered to continue the opiate mixture and poultices, with frictions over the epigastrium. A clyster twice administered, was followed by stools, after the passage of which some amelioration of pain resulted. At nine o'clock frictions ordered to the extremities, which felt cold; warm foot baths and a removal of the poultices, the weight of which was too oppressive.

At eleven o'clock the hardness and size of the abdomen had greatly increased; the pain in the stomach had given place to a more acute pain in the left hypochondrium. The patient was tormented with a burning sensation in that region, and the contact of the lightest substance with the body was insupportable. Pulse more frequent; extremities colder; extreme jactitation every time the patient changed her position. All these symptoms announced acute peritonitis. Ordered twenty leeches to the seat of pain, which was consequently somewhat diminished. Thirst increased, but all liquids uniformly regurgitated. At half-past two, p. m., aggravation of all the symptoms; the abdomen greatly distended, and the patient anticipating suffocation. Cold and clammy perspiration; face drawn in (grippée). At this period, a rupture of one of the viscera appears to have been first suspected. Rubefacients, warm fomentations, &c. At four o'clock the pain had chiefly removed from the left hypochondrium to the hypogastrium. A great desire to pass urine, to which the patient could not respond.* At seven o'clock the abdomen enormously distended, and the impression of suffocation imminent and distressing; constant regurgitation of liquids, none of which passed into the stomach; pulse scarcely felt; extremities cold and damp; features much altered; buzzing sound in the ears, &c. At eight o'clock the patient turned on her right side and ceased to speak: convulsive movements of the face and eyes soon ensued, and she expired. The intellectual faculties remained intact to the last.

On the *post mortem* examination, twenty-five hours afterwards, a puncture made into the abdominal cavity gave issue to a large quantity of gas, which escaped with violence and noise. The peritoneum throughout part of the left side of the abdomen was inflamed, and a brownish liquid filled its cavity. Spleen small. The great cal-de-sac of the stomach, filling most part of the left hypochondrium, presented the appearance of a large rounded tumour of a dark brown colour, with a perforation at its extremity of the size and figure of a halfpenny (*piece de trente sous*) from which a thick black matter exhaling an acid odour was discharged. The membranes were thinned, and appeared to have been greatly distended at the cardiac portion of the stomach, while the pyloric half of the organ was contracted. On opening the stomach a large quantity of a brownish mass escaped, having a distinctly acid reaction, and in which vegetable matters undigested or in different stages of digestion were clearly recognized as entire peas, or their pellicles, pieces of lettuce leaf either unaltered or with their parenchyma only dissolved, &c. The different tunics of the stomach did not equally form the circumference of the perforation; both the serous and the mucous membranes had retracted. The peritoneum was healthy, except where the effused matter from the stomach had come into contact with it. Liver small, and gall bladder contained only a little thick and dark coloured bile. The other abdominal organs were mostly healthy.

The principal phenomena attendant on the disease having been noticed in the above case, our remarks on the subsequent cases may be proportionally shortened.

Case 3.—Mademoiselle D., a boarder in a convent at Montargis, having passed a summer evening in good spirits, and slept well till three o'clock a. m., was then awakened by violent pains in the stomach, for which many palliative remedies were administered by the inmates of the convent without effect. At six o'clock she was seen by a medical practitioner, who found her presenting all the symptoms of speedy dissolution, and she died about ten o'clock. The practitioner, from unacquaintance with such cases, suspecting that death was in this case owing to the effects of poison, procured an order from the police to examine the body. In the cavity of the peritoneum, many loose gooseberry seeds and some husks were found scattered here and there; and on examining the stomach, which appeared quite filled, two perforations, each capable of admitting a bullet, were obvious on the great curvature at the cardiac extremity. The omentum, diaphragm, and all the adjacent organs were in their natural healthy state. On opening the stomach all the aliments taken during the preceding evening were found unaltered; but no signs indicating that death had occurred from poison were discoverable.

Case 3.—During the night of August 24th, 1831, a practitioner at Rochefort, was called to attend Adele V., 23 years of age, attacked with violent spasms of the stomach. Her complexion usually livid and chlorotic, was more so than common; abdomen tender, painful, and very sensitive under pressure, particularly in the region below the umbilicus. She uttered at intervals piercing cries, to which succeeded nausea, and vain attempts to vomit. She had been often subject to pains in the stomach, though of much less violence than on the present occasion. She had eaten but little on the previous day; her dinner, taken at 6 o'clock p.m., consisted chiefly of kidney beans. Treating this at first as an ordinary case of indigestion, the practitioner recommended tea, and other light infusions, to be drunk, and ordered an æther mixture and emollient injections. A few hours afterwards, however, the rapid and great distension of the abdomen alarmed the medical attendant, who appears to have then made of the nature of the disease a pretty accurate diagnosis, which he announced to the friends of the patient. At 4 a.m., the patient having taken some drink, declared that she felt its passage downwards quite through the abdomen into the pelvis. From time to time nausea occurred, respiration was hard, and the face drawn in (grippée); and this state lasted throughout the 25th, in the evening of which the extremities became cold, and the pulse was nearly lost. On the 26th, the symptoms were aggravated, and death occurred about noon. On opening the abdomen a great disengagement of gas, as in the preceding cases, took place, together with the discharge of nearly a quart of a reddish fluid, with the remains of undigested matter intermixed. In the peritoneal cavity, some beans in an unaltered state were met with, and on raising up the stomach a round opening, about one inch and a half in diameter, with thin, irregular, and slightly inflamed edges, was discovered on its posterior surface (lesser curvature.)

Case 4.—Mademoiselle H., seventeen years of age, of a nervous temperament, and habitually pale and melancholic, enjoyed, to all appearance, tolerable health. Menstruation, which had first appeared fifteen months previously, had always been regular. Occasionally Miss H. had complained of a dull pain in the left hypochondrium,

* M. Cazeneuve remarks, in the *Gazette Medicale* for Dec. 1838: "The micturition, suppression of urine, difficulty of excreting it, and pain in the hypogastrium, are frequent symptoms of peritonitis from intestinal perforation, and in a great number of cases are its chief diagnostics."

but it had never been of sufficient intensity to alarm either herself or friends. For nearly three months previously she had enjoyed better spirits than usual; her appetite had been more satisfactory, and she seemed to have a perfect absence of all ailment, when, on the 14th of October, 1836, after having made a hearty dinner, particularly on beans, she felt a wish to evacuate the bowels, and on making a slight effort for that end, a pain ensued in the stomach, of so sharp a character as to cause her to fall prostrate on the floor. The physician who visited her soon afterwards found her presenting all the symptoms of an acute peritonitis. The abdomen was hard, inflated, and very sensitive; pain along all the left side of the trunk as far as the shoulder; extremities cold; the lips colourless, and the face betraying much anxiety; respiration quick; the voice nearly extinct, and the pulse imperceptible. By the aid of frictions and warm infusions. the vital heat was partially restored, a copious vomiting relieved the stomach of some of its undigested contents, and an oleaginous injection brought away the contents of the bowels. The application of forty leeches to the abdomen alleviated some of the symptoms, as the great inflation of that region, &c.; the face and voice assumed their natural state, and the patient obtained some cessation of pain. But all the worst symptoms soon returned, and increased in violence, till the death of the patient, thirty hours after the first invasion of the disease.

The *post-mortem* examination took place twenty-eight hours after death. The peritoneum was found extensively inflamed, and in its cavity was about a pint of sero-purulent matter, with alimentary substances intermixed; liver large, and very pale; spleen deeply coloured, and so soft as to fall to shreds readily between the fingers. The stomach was pale coloured, and exhibited near the middle of its greater curvature a perforation about three-quarters of an inch in diameter, and round, as might have been effected by a rifle-bullet. At a point immediately opposite, on the side of the smaller curvature, was another and much larger perforation, less rounded however. The mucous membrane of the stomach presented in some places, brownish and softened, patches; these extended towards the pylorus, and were even met with in the duodenum. The remainder of the intestinal canal, with all the other abdominal viscera, was healthy, as were the viscera of the thorax.

It will be readily observed that the accident in all the foregoing cases supervened while the stomach was filled with food considered of an indigestible nature. We may here remark that M. Gosse, of Geneva, (the deductions from whose researches have been confirmed by Tiedemann and Gmelin,) has divided substances taken as food into three classes. The first comprises such as are freely digestible; the second indigestible substances, as nuts, almonds, fruit seeds and husks, apples, pears, bran, &c.; and the third, those which are less indigestible, but still not rapidly soluble in the stomach; such are raw vegetables of various kinds, cabbage, onions, turnips, radishes, and the pulp of many fruits. Tiedemann and Gmelin consider the indigestibility of substances to be consequent on their degree of insolubility in the gastric juice; and Gosse has found that in all cases of prolonged or difficult solubility of substances in the stomach, an enormous quantity of gas is generated—a fact which sufficiently accounts for the great inflation of the abdomen, which is so marked a symptom after rupture of the intestinal canal. The persons then subject to flatulence and eructations of wind, we should expect to find the most liable to spontaneous perforations of the stomach; and accordingly these accidents are far more common among women than men, who are also more liable to flatulent disturbance. But it would seem that in most, if not all cases, not only a previous derangement of the functions, but a morbid alteration of the tissues of the stomach exists, a softening or other effect being produced, which renders the membranes unable to resist any very strong pressure. But coetaneously with this morbid condition of the viscus, the general health may be apparently good, and the appetite not deteriorated. The rupture does not commonly (as in case 4) occur at once, without warning, but its access may be divided into two stages; one, the premonitory, characterized by cramping pains in the stomach, nausea, and futile efforts to vomit, the attempt of the organ to rid itself of its contents; and the other marked by the sudden disappearance of all the previous symptoms immediately on the rupture being effected, but which state of quietude is soon followed by the symptoms of peritonitis, and others, betokening the speedy dissolution of the patient. The mode in which the rupture takes place appears to be the following. The stomach, filled for the most part with indigestible food, is inflated to its greatest tensity by the gas thereby generated, while the œsophagus is closed by a spasmodic act.on, a condition invariably the case when the stomach is dilated to its full extent. This closure of the œsophagus readily accounts for the inability of getting any liquid to reach the stomach, it being usually rejected by regurgitation before it can arrive at the cardiac orifice. The pyloric orifice of the stomach, as is well known, does not relax until the contents of the organ are fitted for their passage into the duodenum; and both it and the cardiac orifice being now impervious, while the stomach is on one hand subject to the expansive force of the gas generated in its interior, and on the other to the strong action of the diaphragm and abdominal muscles, as well as that of its own muscular structure, scarcely any other result could be naturally anticipated than that its tunics should somewhere give way. The place in which the rupture happens is almost always in the left half of the organ, sometimes along its greater, but most frequently on its smaller curvature, and near the cardiac orifice. It is at this point that the contents of a stomach purposely distended with air or water, are forced out on the application of pressure. The round form of the orifice produced either spontaneously or artificially gives the notion of a loss of substance, but it is wholly due to the retractive power of the various tissues.

The diagnosis of this disease is not always easy; for symptoms, similar in almost every respect, may result from a morbid cause other than perforation of the stomach, as the following case will prove.

Case 5.—A woman, twenty-nine years of age, who had been accustomed to lead a very regular life, and had never felt any derangement of the digestive functions, was seized, January 28th, 1837, about six o'clock in the evening, with sharp pains in the epigastrium. Her last meal had been taken about four o'clock, when, besides soup, of which cabbage formed a principal constituent, she had eaten a large quantity of fresh pork and greens. Tea and other infusions were administered to reduce the pain, but without success, they being rejected before having passed into the stomach. A medical practitioner called in at two o'clock next morning, found the patient suffering intolerable pain in the epigastric region, which was greatly augmented by the least pressure; the pulse rather frequent, tongue pale and enlarged, and all drinks repelled by an act of regurgitation rather than vomiting. Ordered thirty leeches to the epigastrium; anodyne mixtures and injections. On the 29th, at eleven a.m., a sudden pain was felt in the left hypochondrium, and in a quarter of an hour afterwards there was general tumefaction of the abdomen; the pulse had become weak, hard and frequent; face pale, and features greatly altered; lower extremities cold; nausea and intense thirst. The patient stated that when the pain in the hypochondrium supervened, she felt a sensation as if a body detaching itself from the epigastric fell into the hypochondriac region. Ordered sinapisms to the legs. At three o'clock, the inflation of the abdomen had increased so as to distend the integument to the utmost. Respiration difficult; pulse very weak and quick; extremities cold. The symptoms aggravated till the occurrence of death, at two a.m., on the 30th, the patient being all the time perfectly sensible. On opening the abdomen, thirty hours after death, the gas distending it escaped with violence, and it resumed its ordinary dimensions. The epiploon, mesentery, and other portions of the peritoneum were much injected, and presented strong marks of acute inflammation. In the abdominal cavity were found nearly two quarts of a dark reddish fluid, apparently blood. The stomach was greatly distended, and remarkable for a varicose condition of all the veins on its outer surface, particularly the gastro-epiploica-dextral vein, which in most part of its course was as large as the subclavian. *No perforation was discovered in the stomach;* but one of the veins of the great epiploon was found ruptured, whence proceeded the blood effused into the peritoneal cavity. The abdominal viscera generally were in a healthy state.

Bonnet, Richter, and the Memoirs of the Swedish Royal Academy, recount other cases of spontaneous perforation of the stomach. M. Delpech, in 1830, reported the case of a lady who had for a long time experienced derangement of the nutritive functions and p ins in the stomach, upon which a perforation of that organ supervened. The effusion into the abdomen being but small, by a rigidly spare diet and great care, the worst effects of this formidable accident were arrested, and adhesions of the sides of the wound evidently began to be formed. But eight days of spare diet appeared too long to the parties about the person of the patient, and they administered some more solid food. The vomiting provoked by such means burst the newly formed adhesions, and brought on a condition which rapidly proved mortal. In the above case some advantage was certainly effected at one period by medical aid. But such a circumstance is of very unusual occurrence. Our only chance of being of use is by employing the stomach pump in the early stage of the malady, while the stomach is making efforts to get rid of its contents. For when once the rupture is effected our prognosis must always be of the most unfavourable nature; and counter irritation by rubefacients, blisters, &c., or the ordinary treatment for peritonitis are very inadequate, nay almost futile, means for grappling with the disease. Fortunately, such accidents are comparatively rare, but the practitioner is in no wise the less to be prepared for their occurrence; and others than medical practitioners may derive advantage by being made acquainted with what are sometimes the inevitable consequences of gluttony.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Friday, April 7, 1843 :—

J. B. Ashford, V. Webb, G. Moseley, C. L. Alwork, A. Heeley, S. Barnett, J. Simons, C. Barrett, M. S. Todd, M. J. Tayler, F. Wildbore, J. Baber.

PERISCOPE OF THE WEEK.

Vegetable Morphology.—" What can be more interesting," says a recent French writer, " than the study of the metamorphoses which different parts of plants are subject to. Any one looking at the stamens of a rose, or of a ranunculus, would scarcely think of assimilating them with the leaves or petals of these plants; but if he examines the nymphæa or water-lily, he will be less surprised at being told that the one part (the stamen) is convertible into the other (the petal), for he will perceive, in the specimen before him, all possible transitions between these two parts of the flower well characterised. Again, it is well known that excessive nourishment deprives many of the flowers of our gardens of their stamens, and causes them to change into elegant petals. If any doubt remained on this point, a most convincing proof of its reality is furnished by the Aquilegia or Columbine. Nothing can less resemble the spurred horns of its corolla than its small and slender stamens; yet, by cultivation, these latter are found to become metamorphosed into cornuted petals, which terminate in a spur; and, to prove the truth of this still more convincingly, we may often observe all the possible shades or degrees of

transition between the stamen and the horn in one and the same flower.—In the Canna, or Indian weed, we notice an equally striking illustration of the change; on one side there is often a simple unilocular anther to be seen, and on the other a petal in its place ....We thus see that a stamen is nothing else but a metamorphosed petal; and as it (the petal) is only a variety of a leaf, the stamen can be regarded as nothing more. A leaf enfeebled becomes a petal; and more enfeebled still, it becomes a stamen."

Legal Definition of Rape.—Rape, says Mr. H. Cooper is the carnal knowledge of a woman by force against her will. Formerly much doubt existed as to whether earnal knowledge did not comprehend emission, but by the 9 Geo. IV., c. 31, s. 18, this point is so far settled by enacting that the carnal knowledge shall be deemed complete upon proof of penetration only. The question, therefore, which now arises is, what is penetration? and it seems that the law admits the slightest penetration, although the hymen be not ruptured, as constituting the offence. Cases decided in accordance with this view will be found in 1 East's P. C. 438; 1 Mood. Cr. C. 337 and 342; 1 Russ. C. L. 803; and 4 Car and P. 249. There, however, is one case on record where Baron Gurney held that the penetration was not sufficient, the hymen being unruptured (see 5 Car and P. 321.) Cases of labour have been found progressing, the hymen being unruptured, and will be found mentioned in Davis's "Obstet. Med.," vol., p. 104 It can hardly be said that impregnation can take place without some degree of penetration, and the same amount of penetration may take place in rape as took place in the cases referred to, leaving the hymen unruptured. Gavard found the hymen perfect in a prostitute who had syphilis.

Influence of Politics on Science.—It is curious to notice, says Dr. J. Johnson, the connection between sides in politics, and some of the schools of art and literature in France.—The Hippocratic physicians are almost all ultra royalists; the out-and-out Broussaists are to a man either republicans or Buonapartists; while the middle men, the doctrinaires, those of the *juste-milieu* party, are generally friendly to Louis Philippe and the existing state of affairs. The first set clings closely to every thing that is hallowed by age, and venerable from association; they love to throw an air of spirituality around all the phenomena of living nature; and hence their favourite writers are such men as Chateaubriand and Lamartine.—The Broussaists are the antipodes of these; they are all more or less decided materialists in their general philosophy, and regard with especial admiration the bold originality of the modern Romancists, such as Victor Hugo, Balzac, &c. The eclectics, or the third party, are intermediate between the two; their philosophy is altogether of a calmer character than that of either; less enthusiastic and poetical than the former, they avoid the cold abstractions and strivings after exactitude of the latter, who vainly seek to reduce every thing of living as well as of inanimate nature under the dominion of mathematical and arithmetical laws. Of this party, Andral is, perhaps, the head in medical, as Guizot is in political, science.

Leaves of Betula Alnus *L.*, as a Resolutive.—Dr. Büchner states that the topical application of the leaves of the *betula alnus* is much resorted to in Stadt-Steinach, to cause the cessation of the lacteal secretion, and the resolution of tumours of the breast in women who do not suckle, and in those who wish to wean their children. To prepare them, they are cut in small pieces, then heated on a plate till they are covered with a liquid which they allow to exude under the influence of heat; as it is in this state that a layer of them, of a certain thickness, is formed on the breast.—For the therapeutical employment of these leaves, Dr. Büchner collects them early in the morning; the most efficacious, according to him, are those gathered in spring, in localities much exposed to the morning dew; they are then very resinous and viscous. In all cases, this practitioner recommends the preference to be given to those leaves which are the most succulent. They are strung together, and their internal face is put in contact with the skin which covers the diseased organs, the application must be renewed twice or thrice per diem.

A New Cure for Consumption.—Mr. Eagle, in the *Lancet*, recommends *splenic* excision, in cases of phthisis, and says that he has "extended his experiments to the monkey and other animals; and, reasoning from analogy of effect in *liver consumption*, this operation would save two out of three in *lung consumption*, or (the deaths from this latter disease being sixty thousand) forty thousand annually in Great Britain alone; in which event it is hardly necessary to observe that it would be the most important operation ever introduced into surgery. By way of variety," he adds, "he begs to offer the following theory of inflammation and the inflammatory crust:—Inflammation consists in this, namely, that the fibrine, &c., which should pass from the *arterial* into the *lymphatic* system, passes into the *venous*, thus constituting the inflammatory crust!!"

Galvanism in Diseases of the Eye.—Dr. Neumann has recently published some observations on the *modus operandi*, of galvanism in eye diseases, and especially recommends its adoption in cases where the cataract is found adherent to the iris, and in opacities of the cornea. Two pairs of discs, of about two inches in diameter, are represented as being the strongest and best for use, consistently with the necessity for avoiding inflammation by too strong a shock for the organism to bear.

Spermatozoa within the Ovum.—Several months since Dr. Barry communicated to the Royal Society the fact that he had observed, and shown to Professor Owen and others, spermatozoa *within* the mammiferous ovum. The ova were those of the rabbit, taken, twenty-four hours *post-coitum*, from the Fallopian tube. He has recently confirmed the observation; several ova from the Fallopian tube of another of these animals, in a somewhat earlier stage, having presented spermatozoa in their interior, *i. e.* (as in the first observation,) within the thick transparent membrane ("*zona pellucida*") brought with the ovum from the ovary.

Diabetes Mellitus.—The examination after death of the body of a man 31 years of age, who died of diabetes mellitus in the Queen's Hospital at Birmingham, under the care of Dr. Percy, presented an almost complete absence of every thing that resembled ordinary fat in the omentum, mesentery, and throughout the body. The mesenteric glands were generally enlarged, and on section exhibited a somewhat gelatinous aspect. The right kidney weighed 6 oz. 5 drs.; the left, after having been injected with size, 7 oz. 8 drs., both were more deeply lobulated than usual. They were equal in size; on the surface of the right kidney there were collections of what appeared like caseous matter before section; they were eight in number, varying in size from a pea to a hazel-nut, and were scattered irregularly on section: it was ascertained that they contained true purulent matter. There was no proper fat in the vicinity of the kidneys, but only a substitute of gelatinous consistence: the infundibula and calices were much larger than usual. There was a small collection of pus in the vicinity of the prostate.

M. Dumas on the Mutual Harmonies of Vegetable and Animal Life.—For a length of time chemists have been in the habit of recognising three neutral azotised constituents in animal bodies, albumen, fibrine, and caseine. About a twelvemonth ago, M. Boussingault and myself endeavoured to prove that these three component principles exist in plants also, and that, therefore, they pass already formed into the bodies of herbivorous animals, and thence come to enter into those of the carnivorous. According to the views which we then explained, it appeared to us that to plants only belongs the privilege of forming these products, which become afterwards assimilated with the bodies of animals. We have extended these principles to the formation even of fatty matters, which in our opinion, have their origin solely in the vegetable world, and which subsequently play the part of a combustible in animal bodies. We pointed out the necessity of grouping together all the substances of organic chemistry which possess the property of passing into the state of lactic acid by fermentation, and which, like sugar and the feculent grains, form so important a part of the food of man and the lower animals: they are all really and truly the products of plants alone, developed by the force of vegetable life. The following exhibits our views on the subject:—*The Vegetable* produces neutral azotised matters, fatty matters, sugar, fecula, gum; decomposes carbonic acid, water, the ammoniacal salts; disengages oxygen; absorbs caloric, electricity; is an apparatus of reduction; is motionless.—*The Animal* consumes neutral azotised matters, fatty matters, sugar, fecula, gum; produces carbonic acid, water, the ammoniacal salts, oxygen,* caloric, electricity; is an apparatus of oxydation; is locomotive.—A graminivorous bird finds in the corn that it lives upon all the elements necessary for its nutrition. A dog finds in bread whatever its organisation requires for its sustenance and growth. A cow finds in grass all the elements that serve not only for its own nourishment, but also for the formation of milk that is so rich in caseine. It thus appears that cereal grains contain, in addition to their saccharine and amylaceous elements, the azotised materials which are found in all animal bodies.—"From what has been now said, we may draw the following two fundamental principles respecting the feeding of animals.—1. That neutral azotised materials constitute an indispensable element in the food of animals.—2. On the contrary, that animals can, to a certain point, do without fatty matters and wholly without feculent and saccharine matters; but on this condition only, that the fatty substances are replaced by proportional quantities of fecula and sugar, and *vice versa*. The privation of fatty matter does not for a time compromise the life of the animal; nevertheless it exercices a peculiar effect which

* Is there not a mistake here? The living animal surely *consumes* rather than *produces* oxygen. There is, probably, a typographical error, as the repetition of the word "produces" in the next line seems to imply that its converse had been used before.—[Dr. Johnson in "Medico-Chirurgical Review."]

deserves a few words' notice. The necessity, which all animals feel to have food that contains the neutral azotised matters which exist in their own organisation, shews pretty clearly that they cannot create these substances for themselves. But to place this fact in a more distinct point of view, we have only to follow these azotised matters after being received into the stomach, and to find out what is their final destination. Now it is not difficult to prove, that they are essentially represented by the urea—which in man and in the herbivora constitutes the leading element of the urinary secretion, and by the uric acid, which in the case of birds and reptiles plays the same part as the urea. Allowance being made for the excrementitious matter from the bowels, we may assume that an adult man absorbs every day an amount of neutral azotised matter sufficient to represent 15 or 16 grammes of azote—a quantity of azote found in about 30 or 32 grammes of urea. May we not very reasonably conclude that the azotised ingredients of our food serve to produce this urea, and that every effort of the animal system is directed either to assimilate it to itself, when it has occasion for it, or to convert it into urea? The truth of this opinion becomes doubly sure when we remember that the study of the phenomena of respiration shews us that the fatty matters disappear from the animal organism in consequence of a veritable combustion, that the amylaceous and saccharine matters are also consumed (brulés), and lastly, that the difference between urea and the neutral animal matters from which it is derived, is most exactly represented by a phenomenon of combustion." .... "It clearly follows that the quantity of azote, which our food contains, gives us a clue to calculate the powers of assimilation and the quantity of aliment required for the due sustenance of life; the azotised matter being the substance that is essentially assimilable, and that which constitutes the web and woof, so to speak, of the whole system. As this element (the azote), is found almost entirely in the veins, under the form of urea, it remains for us to enquire what is the nature of the urea, and in what respect it differs from the neutral azotised matter whence it is derived. The beautiful researches of M. Vohler have shewn us that the urea may be generated by a modification of the cyanuret of ammonia—itself formed by an oxyde of cyanogen and an oxyde of ammonium There are thus given off from the animal body four different oxydes—carbonic acid, cyanic acid, the oxyde of ammonium; the two last combined and modified produce urea."............" If we reflect on the circumstances that the blood constitutes a solution of the solid materials of the economy, we can readily understand how it is so important that the process of digestion should be incessantly restoring to the blood its constituent elements, in order that these elements, which are continually undergoing the act of combustion, should not be taken up again by the impoverished blood, and conveyed to the different organs which contain them. And to apply these principles to the azotised matters of which we have been treating, we should say that, if it is indispensable that the alimentation of a man should furnish a daily supply of from 100 to 120 grammes of dry azotised matters, it is because we know that nothing can prevent the system from losing in that period of time such a quantity of these by respiration and the combustion that is the consequence of it."....... "In concluding his remarks. M. Dumas said: 'The academy will be able to judge from the preceding observations what is the nature of the researches which I have been engaged in, with the view of establishing an exact balance between the quantity of fatty albuminous and saccharine matters consumed, and the amount of caloric produced by their combustion in the body of living animals. It will also see, and we hope with feelings of some interest, what experiments we have devoted attention to, for the purpose of establishing on a certain basis the rules to be followed in calculating the expenses of maintaining our soldiers, workpeople, paupers, and prisoners. These are matters of the highest importance in an economical as well as in a medical point of view, and deserve attention from the political philosopher no less than from the physiological enquirer.' "

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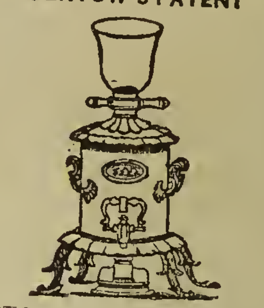

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London: Printed and Published by JAMES ANGERSTEIN CARFRAE, 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex.—April 15th, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 187. Vol. VIII. LONDON, SATURDAY, APRIL 22, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper, and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per Half-year, Post-free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE III.

I perhaps dwelt in the last lecture rather more at length upon the subject of *carbonic acid* than you might think necessary in reference to our present subject; but the fact is, that in the first place it furnishes us with the means, and a very convenient and accurate one, of determining the *quantity of carbon* in any organic body, for, for this purpose, it is only necessary to convert its carbon into carbonic acid, and then, knowing the composition of carbonic acid, we infer from it the quantity of carbon present, for you will remember that twenty-two parts by weight of carbonic acid are equivalent to six of charcoal or carbon. Secondly, in reference to the atmosphere, we find carbonic acid constantly present in it, and though its proportion fluctuates with times and seasons, it may be assumed at the average of one in a thousand, and although, in consequence of this small per centage, we are in the habit of talking of it as though it were an insignificant and accidental ingredient, you will, nevertheless, find that nearly the whole of the carbon which exists in organic matter, vegetable as well as animal, is originally derived from the air, and that small as its actual quantity appears to be, it amounts, if we calculate it in reference to the whole mass of the atmosphere, (and we shall afterwards go into these calculations) to an enormous and quite sufficient proportion; that in fact, the quantity of charcoal thus existing in the atmosphere, equals in weight that which is contained in all organic bodies; so that all the charcoal that forms part of the vegetable and the animal world, and I might add, of the mineral world, exists in equivalent quantity in the atmosphere, at one time, spread over the globe.

No less important a subject is that which I have adverted to, as to the nature of soils, and the important part borne by lime and calcareous matters generally. In the last lecture I pointed out to you the method of determining the quantity of carbonic acid, and consequently the quantity of carbon or of carbonate of lime in the varieties of marble, limestone, or other calcareous mineral or soil, presented to us for examination; so that it will be unnecessary to repeat the experiment here.

There is another compound of carbon and oxygen, which I only mention now in order that you may not suppose I overlook it; it is a very curious and important one, called *oxalic acid*, from having been obtained originally from certain varieties of wood-sorrel, and since ascertained to exist in several vegetables, and to be produced artificially by dissolving sugar in nitric acid, which solution, when heated and evaporated, yields abundance of oxalic acid. It is crystalline, and so unlike carbonic acid that it is intensely sour; and when pure is a very powerful, and indeed a very poisonous, acid. It has a number of curious properties; its composition is as follows:—

	Atoms.	Equivalent Weight.	Per Cent.
Carbon	2	12	33·34
Oxygen	3	24	66·66
Oxalic Acid	1	36	100·00

or,

	Atoms.	Equivalent Weight.	Per Cent.
Carbonic Oxide	1	14	38·8
Acid	1	22	61·2
	1	36	100·0

The crystallized acid consists of

	Atoms.	Equivalent Weight.	Per Cent.
Anhydrous Oxalic Acid	1	36	57·14
Water	3	27	42·86
	1	63	100·00

Carbonic acid consists of 1 atom of carbon, and 2 of oxygen, but oxalic acid consists of 2 of carbon, and 3 of oxygen. Or it may be looked at as the table shows, as a compound, or rather as containing the elements of, carbonic oxide, and carbonic acid. The reason of presenting it under this anomalous title is, as you will find by and by, that when we come to deprive it of its water of crystallization, oxalic acid separates immediately into carbonic acid, and carbonic oxide: in fact, we cannot exhibit it in an isolated state, but only combined with water. We shall have, afterwards, to view it as an important product in many of our operations.

Now, there is another substance found in the atmosphere, in very minute quantity indeed, which is *ammonia.* You will recollect, that our atmosphere, and I must again and again press it on your attention, is a mechanical mixture of the different substances which we have enumerated, and not a chemical compound. We have, for the great bulk of the air, oxygen and nitrogen: to these are superadded, carbonic acid, in proportion of only 1 in 1000, and then we have this other substance, which is *ammonia.* If we analyze the atmosphere with the utmost care, we cannot find ammonia in it, or at least, nothing beyond the slightest occasional trace; but if we expose water for a long time to the contact of the air, it will ultimately be found, that it acquires ammonia. If we examine the rain as it falls through the atmosphere, we also find in it minute quantities of ammonia. It is clear, therefore, that though we may possibly find no ammonia in the atmosphere, we do find it in certain things which have been exposed to the atmosphere, for ammonia is a very soluble body, and a very combinable body; and many substances eagerly take it up when exposed to gaseous mixtures which only contain traces of it. No sooner does a shower of rain fall through the air, than ammonia is carried down in aqueous solution. Certain kinds of limestone and sandstone, when exposed to the air, also absorb ammonia, and so does oxide of iron. In short, you will find, that ammonia, minute indeed in quantity, as it is in the air, performs, nevertheless, a most important part in regard to the nutritive powers of the soil in fitting it for the growth of vegetables. This subject has been lately importantly elucidated by the researches of Dumas and Liebig, and one of the most striking parts of the new doctrine consists in calling our attention to ammonia, as the source of nitrogen in organic bodies. We knew, that nitrogen was there, but we never precisely knew where it came from.

We knew that nitrogen was in the air, and, indeed, that it constituted the great bulk of the atmosphere, and the medium through which many other things are diffused; but we had no evidence that this nitrogen was to any extent absorbed either by plants or animals, and, in fact, the source of the nitrogen which these contain was never clearly understood, till recent investigations taught us that ammonia was its adequate and efficient source. In fact, vegetables derive nitrogen from the soil, absorbing it in the form of ammonia,—and although certain fertile soils may possibly not contain ammonia, we shall probably find in them nitrogen in some other shape.

Ammonia, therefore, is a highly important substance in organic and agricultural chemistry; and its presence in the atmosphere, and in soils and manures; its sources, and the means of producing and economizing it, are subjects which we shall have frequently to dwell upon.

There is, however, another point of view in which ammonia must engage our attention, viz., as furnishing us with the means of determining the quantity of nitrogen in organic bodies; for ammonia is a binary and definite compound of hydrogen and nitrogen, and, as in qualitative analysis, the presence or formation of ammonia is received as an indication of the existence of nitrogen; so, in quantitative analysis, the relative proportion of nitrogen is accurately deducible when that of ammonia has been ascertained.

And, now, let me remind you of a few facts bearing upon the composition, analytic, as well as synthetic, and upon the properties and distinctive characters of ammonia. The sources and properties of hydrogen and of nitrogen, have already been adverted to. Hydrogen is an inflammable gas, nitrogen an uninflammable one; and neither of them are what we call, supporters of combustion—that is, they both extinguish flame. If I mix together three parts of hydrogen by bulk, and one part of nitrogen by bulk, the relative *weights* of the gases are to each other as 3 to 14—the density or specific gravity of nitrogen being to that of hydrogen, as 14 to 1. If I now mix three volumes of hydrogen, and one volume of nitrogen, I shall find that I have four volumes of a mere mechanical mixture of the two gases, and that, under such circumstances, they shew not the smallest inclination to chemical combination. How, then, can we bring about their union? or induce them so to form ammonia? We can do this very readily indeed, by presenting them to each other in their *nascent* states; if, instead of collecting hydrogen separately, and nitrogen separately, and mixing them together, I elicit them from their compounds at one and the same time, I then find that they will combine to produce ammonia. The exact composition of ammonia I give you in the following table:—

	Atoms.	Equivalent weight.	Per cent.
Nitrogen	1	14	81.13
Hydrogen	3	3	18.87
Ammonia	1	17	100.00

Or,—

			Grains.
50	Cubic inches of	Nitrogen	= 15.08
150	ditto	Hydrogen	= 3.19
100	ditto	Ammonia	= 18.27

Now, let us briefly examine the properties of ammonia, and for the purpose of showing it you in its purest form, I shall here liberate it by applying a gentle heat to this mixture of quick lime and sal ammoniac; and, as it is very absorbable by water, I must, you see, collect it over mercury. Ammonia is a very extraordinary body, it is a gaseous body like its component parts; it has no colour, but has a very strong and very peculiar odour, and if it gets into the nostrils in its undiluted state it is a most caustic substance, but if diluted with air is an agreeable stimulant, constituting, in fact, the stimulant part of *smelling salts.* It extinguishes flame; and here you see the difference between a mere mixture and a chemical compound; for, if I put a taper into this

mixture of nitrogen and hydrogen, it takes fire and burns in consequence of the excess of hydrogen.

[Here the lecturer showed the gases separately, the one extinguishing a taper, the other taking fire; he then measured one volume of nitrogen and three of hydrogen, and having mixed them, showed that the mixture was inflammable.]

But, with regard to ammonia; that is to the *combination* of nitrogen and hydrogen, I find, as, in fact, my diagram has shown you, that one volume of nitrogen and three volumes of hydrogen have become *condensed* so as only to constitute two volumes of ammonia, or in other words, that fifty cubic inches of nitrogen and 150 of hydrogen do not form 200, but only 100 cubic inches of ammonia.

Now, although ammonia extinguishes a taper, you may, perhaps, observe that on plunging it into the jar of the gas its flame becomes somewhat enlarged, and that the ammonia so far may be said to exhibit a tendency to burn; and, in fact, if I mix it with oxygen in proper proportions and then put a taper to it, it not only burns, but explodes, and gives us results which we will examine presently.

Another character belonging to ammonia is that it is *alkaline*, that is, it reacts on vegetable colours in the manner of potash, soda, and other bodies which we call alkalies. I can give you a notion of its alkalinity by means of common test papers: if I put a piece of yellow turmeric paper into ammonia, it immediately becomes brown or red, and a piece of reddened litmus paper has its blue restored. Ammonia is very soluble in water, water taking up many hundred times its volume of ammonia, so that if I only put a few drops of water into this jar of ammonia, I shall find that the water will take up the whole of it.

[Mr. Brande illustrated these properties of ammonia, by throwing up a few drops of a reddened solution of litmus into a tall tube of ammonia, standing over mercury: the gas was entirely absorbed as indicated by the mercury rising into and at length filling the tube, and the red liquor became deep blue.]

This solubility of ammonia renders it conveniently applicable in the laboratory and in medicine, and when it is thus dissolved in water a strong alkaline solution is formed.

If I absorb ammonia by acids, I obtain *ammoniacal salts;* one of these, and a very important one, is obtained by passing ammonia into diluted muriatic acid (or by mixing ammonia and muriatic acid gases); this is the salt formerly known as *sal ammoniac*, now called muriate, or hydrochlorate of ammonia; or sometimes *chloride of ammonium.* And let me here show you a property of this salt of which we shall afterwards avail ourselves in analytical researches, namely, that when added to an alcoholic solution of chloride of platinum, it forms an insoluble yellow precipitate (*the ammonio-chloride of platinum*) thus enabling me to throw down or separate the ammonia in a state or condition in which I can determine its quantity by weight, for this ammonio-chloride is a definite compound, and when carefully dried contains

Pl...1...99 Cl...2...72	171 Bichloride of Platinum.	225	Ammonio-Bichloride of Platinum.
H...1...1 Cl...1...36	37 Hydrochloric Acid.		
H...3...3 N...1...14	17 Ammonia.		

It is, you see, a complicated body, composed of three distinct elementary bodies, platinum, hydrogen, and nitrogen; it contains 171 parts of bichloride of platinum, 37 hydrochloric acid, and 17 of ammonia; so that we thus establish this fact, that 225 grs. of this yellow powder are equivalent to 17 grs. of ammonia or to 14 of nitrogen. Now suppose for a moment, that I have any compound containing nitrogen, and want to know how much nitrogen it contains, I first convert the nitrogen into ammonia: I absorb this ammonia by muriatic acid, and then precipitate it in the form of this insoluble ammonio-chloride: I collect and dry it carefully and weigh it, and then every 225 grains indicate 17 grains of nitrogen. There are other modes of ascertaining the proportion of nitrogen but this, is, on the whole, the best and hence I have dwelt on it so much at length.

[Mr. Brande shewed the method of manipulating for the qualitative and quantitative determination of ammonia by the methods suggested by Messrs. Will and Varrentrapp, and pointed out the requisite precautions in collecting, drying, and weighing the ammonio-chloride of platinum.]

Ammonia furnishes a good instance of the extraordinary change of properties which result from chemical combination, and of a compound in all respects unlike its components. Nitrogen and hydrogen are quite insoluble in water, and quite tasteless; ammonia is very pungent and acrid, and very soluble in water; nitrogen and hydrogen have no alkaline properties; ammonia is a powerful alkaline base.

Instead of collecting the nitrogen of an organic body in the form of ammonia, we sometimes liberate it in its isolated and gaseous state, and then infer its weight from its bulk; but this method is on the whole less accurate and satisfactory. In such a case the azotised substance is mixed with oxide of copper, by which the carbon is converted into carbonic acid, and the hydrogen into water; these are collected in the usual way, and the nitrogen is evolved and collected over mercury; but in this mode of proceeding it is often difficult to prevent the conversion of a part of the nitrogen into one of its oxides or acids.

[Having entered into the details of several experiments further illustrative of the *composition* of ammonia, and instanced its production in various cases of decay and putrefaction, Mr. Brande proceeded to shew various methods of effecting its decomposition; he shewed the action of gaseous and of liquid chlorine upon gaseous and liquid ammonia, and explained the theory of the evolution of nitrogen and the formation of sal ammoniac, which in these cases ensues.]

The evolution of ammonia is often made manifest by the abundant white fumes, which are in such cases produced by the approximation of a glass rod dipped in muriatic acid, and which arise out of the formation and condensation of sal ammoniac. If I expose a piece of glass moistened with muriatic acid to the atmosphere, it is not uncommon in particular situations to find that the acid absorbs a sufficiency of ammonia to saturate it, and to cause the formation of crystals of sal ammoniac. In short, wherever a great deal of coal is burned, and where organic bodies are undergoing putrefaction, we find a proportionate formation, or evolution of ammonia. In London, we often observe small stellated crystals upon dirty windows, and if we examine them, we find they are either crystals of sal ammoniac, or of sulphate of ammonia.

One other experimental illustration on this subject, and then I have done with ammonia. It is this: I have here a mixture of ammonia and oxygen; I throw up into it a small piece of hot spongy platinum, and now I find that the ammonia and oxygen begin to react on each other, that the platinum becomes very hot, that the bulk of the gases very considerably diminishes, and that the oxygen combines with the hydrogen of the ammonia to form water, the nitrogen of the ammonia being liberated; by thus bringing the ammonia and oxygen into close contact with each other, we convert them into water and nitrogen; and if I so modify this experiment as to convey a mixture of ammonia, and a considerable excess of oxygen over red-hot spongy platinum, I shall obtain water and nitrous acid; thus resolving the dry alkali into a hydrated acid, a curious and instructive metamorphosis.

[This experiment was shewn, and succeeded perfectly,—abundant red fumes of nitrous acid being formed in the globe into which the vapours were conducted.]

I must now endeavour to apply such information as we have obtained respecting ammonia, somewhat more in detail to the particular objects before us; and, first, as to the evolution, or rather production, of ammonia, during the destructive distillation of azotised organic bodies. If I put some horn shavings, or ivory or bone dust, into a retort, and heat it, I form ammonia. The substances in question contain no pre-existent ammonia, but they contain nitrogen and hydrogen; and during the experiment they are presented to each other at the moment of evolution, or, as I have elsewhere termed it, in their *nascent state*, and, under such circumstances, they combine, and form ammonia: this is easily shown, by suffering the evolved vapour to come in contact with turmeric paper, which is immediately reddened. Another similar formation of ammonia ensues when common coal is distilled, as in the ordinary processes for the manufacture of coal-gas. This ammonia, though partially condensed, and entering into new combinations, used formerly to find its way in no inconsiderable quantity, into the gas-mains and service-pipes, and was productive of infinite mischief in its corrosive action upon the brass and copper fittings—besides all which, it tended considerably to diminish the illuminating power of the gas when burned; and, as I believe, to the occasional formation of nitric acid. Now, however, it is carefully abstracted and absorbed, by passing the gas through dilute sulphuric acid; and, in that way, a very large quantity of sulphate of ammonia is obtained. This product has acquired considerable interest, from having been lately used as a manure; and it appears likely to become a very important one, in consequence of the quantity of available nitrogen which it contains.

Now you will recollect, that I have not only told you, but what is much more to our purpose, I have shewn you, that the great bulk of our atmosphere is made up of a mixture of 4 parts of nitrogen, and 1 of oxygen, and that through this mass a varying proportion of the vapour of water, and of carbonic acid, are diffused, the average amount of the former being perhaps about 1 per cent. and of the latter 1-tenth per cent. We have also found traces of ammonia in the air. Another substance, the presence of which has been demonstrated in the air, though in infinitely smaller quantity than the others, is *carburetted hydrogen.* This, as its name imports, is a gaseous compound of carbon and hydrogen. There are several of these compounds, and some of them very curious and important, which will be afterwards brought before you. I may just stop here to shew you, that when carburetted hydrogen gases are burned, the products are water and carbonic acid. These gases are not only the result of the destructive distillation of organic matter, but are also produced during the putrefaction of vegetable substances, and a peculiar variety of carburetted hydrogen, is given out in considerable quantity from the black mud which often may be abundantly found at the bottom of old and stagnant ponds, surrounded by trees, and in sequestered and undisturbed situations. But I merely now mention these subjects in reference to the trace of carburetted hydrogen, which Dumas discovered to be present in atmospheric air.

Before we part, let me briefly call your attention to the subject of *chemical symbols*, as they have been called—which, though apparently very enigmatical, are full of importance, especially in their application to organic chemistry. They enable us wonderfully to condense and facilitate our illustrations and discussions, and are becoming so commonly used as to force themselves upon the notice of even the superficial reader. You open a chemical book, and you find C., N., H., O., and so on, and you perhaps shut it up, and think you cannot understand it; but a very little help will enable you to see clearly what is meant. The elementary bodies which we have chiefly to deal with, are, as I have told you, carbon, hydrogen, nitrogen, and oxygen; now, instead of writing these at full length, we put down C., H., N., O.; but a number of other bodies begin with the same letters, and, therefore, we add, in such cases some explanatory mark. Thus C. is used as the symbol for *carbon;* but chlorine, which also begins with a C., is designated by Cl., and calcium by Ca. and so on. Again, N. is the initiatory letter of nickel as well as of nitrogen, and the symbol for nickel is Ni., the simple N. being reserved for nitrogen; but it is not necessary further to enter into these details. You will recollect, that when you see the letter C. it means *one atom* of carbon, and I have told you that the assumed weight, or equivalent, of an atom of carbon is $= 6$; so that the letter C. implies *six parts by weight of carbon.* The letter. H. signifies one atom of hydrogen, $= 1$, and N. represents one atom of nitrogen, $= 14$; O. means an atom of oxygen, $= 8$ parts by weight. Now, if you

associate in your minds the letter C. with six of carbon, N. with fourteen of nitrogen, O. with eight of oxygen, and H. with one of hydrogen, you will have no difficulty in recollecting that the symbol H.O. (which is that of water) implies an atom of hydrogen added to an atom of oxygen, or by weight 1 and 8—the *equivalent* of water being $1 + 8 = 9$. Where 1 atom or equivalent of one substance unites with 2 or more of another, the latter are most conveniently expressed by numbers immediately following the symbol; carbonic acid, for instance, is a compound of 1 atom of carbon and 2 atoms of oxygen, and is written thus, CO_2; ammonia is a compound of 1 atom of nitrogen and 3 atoms of hydrogen, and is written NH^3; nitric acid is a compound of an atom of nitrogen and 5 atoms of oxygen, and is written NO_5. When I wish to represent a combination of 2 or more atoms of one compound with 2 or more of another, I place the compound generally in brackets and the number indicating its atoms or equivalents before it; thus, $3(NO^5), + 5(HO.)$ implies a compound of 3 atoms of nitric acid and 5 of water—the symbol $+$ being sometimes expressed, and at others omitted or understood; thus, if I wish to express in symbols the combination of 1 atom of nitric acid with 1 of ammonia and 1 of water, I may simply write it thus, NO_5, NH_3, HO. And bearing in mind the equivalent weights of the atoms, it is obvious that C_5 implies 30 parts by weight of carbon—H_6, 6 of hydrogen—N^{10}, 140 of nitrogen—O^8, 64 of oxygen—and so on.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

Gentlemen,—I was, in my last lecture, describing the symptoms of the sthenic variety of bronchitis, the chief signs and symptoms of which I mentioned were those of inflammatory disease, combined with disturbance in the functions of the chest and respiration, more or less cough, dyspnœa, and expectoration of saline, viscid, tenacious, but often colourless, mucus. The physical signs are first of all, the sibilant or sonorous rhonchus, heard in different parts of the chest; and if the disease is excessive, and after awhile mucus comes to be secreted, there is crepitation, or the crackling or bubbling sound, heard in various degrees in the large and in the small tubes. But if we do not check it in this stage, the symptoms very soon become changed in their character by the symptoms of asphyxia, and the livid stage of bronchitis presents one of the varieties of the phenomena of asphyxia. There is great imperfection in the circulation of the blood, and besides dyspnœa there is cough and fever, which give place to a depressed state, owing to the injury done to the arterial function. The pulse, instead of being hard and full, is thready and weak, and sometimes irregular, and the skin instead of retaining its febrile heat becomes partially cold, and cold perspiration sometimes breaks out. The sensorium too is apt to be disturbed, and slight delirium shews itself. The tongue is more furred than previously, and on listening to the chest, the respiration is found to be impeded universally throughout the chest; crepitation exists in almost every part, shewing the presence of the mucus impeding the breathing in every part of the lung. In favourable cases this disease, in the severe form, may decline early; it cannot continue long in the severe form; and it proves fatal more rapidly than most other diseases of the chest. In favourable cases it declines between the third and sixth day. In its decline it may be accompanied by a change in the character of the expectoration, which becomes less opaque, or less saline and irritating; though it may continue as abundant in quantity. With this, the pulse is slower and more regular, and the lividity disappears, and the symptoms progressively improve. Sometimes, on the other hand, the symptoms become aggravated, and the disease passes into the chronic form.

Now the chief difference between the sthenic and the asthenic form is, that the latter comes on more violently; instead of their being two or three days of active heat of skin, and so forth, it may be only for a few hours, with great oppression in the respiratory function, and a cold clammy surface and thready pulse. You find that the cause of this is the sudden secretion that takes place in the bronchial tubes. The asthenic form is therefore called likewise humid bronchitis. In this variety of disease there is generally more constitutional disturbance and less active fever. There is disorder in the stomach, the tongue is more coated and furred, and the secretion of the liver is often disordered. There may be considerable depression and feeling of uneasiness at first, and there frequently is but little pain in the chest; the existence of pain is much less constant, and the amount of oppression in breathing is such as obliges the patient to sit up from the great irritation he feels when he lies down. The difference in the physical signs arises from the early coming on of profuse secretion, and there is at the commencement a mucous or crepitant rhonchus heard throughout every part of the chest. There is too, a diminution of sound on percussion, owing not only to the effusion in the bronchial tubes, but also partly to the congestion of the lungs, which arises as part of the approaching asphyxia. Impediment in the respiration never continues long without causing a great congestion of the pulmonary plexus, which also takes place in the advanced stages of the sthenic bronchitis. Therefore, on percussion you may have some dullness, and also bronchophony, but you do not hear the sound of the voice in the tubes, in consequence of the liquid effusion in the tubes; and thus the congestion, or increased density of the lungs, will very frequently give rise to bronchophony and bronchial respiration in bronchitis. This increased secretion often gives rise to dyspnœa, which comes on towards the evening, when there is quite a struggling for breath—the patient cannot go to sleep, and there is a feeling of suffocation. The causes of the severe form of bronchitis are the same as those which cause the mild form—cold, and especially damp and sudden atmospheric changes. It likewise occurs sometimes, in the severe form, in connection with fever, particularly eruptive fevers—the exanthematous fevers—measles—scarlatina—small-pox, and others, which are often accompanied by a very intense form of bronchitis. The same thing may be said of the continued fevers of what is called the catarrhal type. Now, one of the distinguishing features between bronchitis, leading to this form, and other forms, is, that at the commencement it is less distinct, and, therefore, the onset of the disease is more insidious. The patient is often distressed with feelings of uneasiness and oppression, and consequently the fever is not so readily indicated. You are often surprised on listening to the chests of persons affected with the small-pox, and other fevers, to find the variety of rhonchi that exist when the patient coughs but little. This combination of bronchitis is important, because it is not unfrequently the cause of death in these cases. Other predisposing causes of bronchitis in its acute form, are various organic diseases of the lungs and of the heart. Emphysema of the lungs renders a person liable to an attack of acute bronchitis. The same thing may be said of tuberculous diseases, and attacks of bronchitis, occurring in tuberculous subjects, are often the cause of aggravation of the symptoms from which they suffer. Organic diseases of the heart present precisely the same thing. Persons are attacked with increased difficulty of breathing, from the expectoration from acute bronchitis, sometimes in the sthenic, and sometimes in the asthenic form, and in some instances, from the coming on of a flux. The morbid anatomy of the intense bronchitis is not very decided. On opening the chest of a person who had died of this disease, one thing that struck me was the state of the lungs. They did not collapse, but remained distended, as if in a state of emphysema, and on further examination, I found this arose from an accumulation of mucus in the bronchial tubes. A sort of viscid mucus had been expectorated during lifetime. On examination of the inflamed membranes lining the tubes, I did not find so much difference as might have been expected. There were various patches of redness, but this redness was very slight, in comparison with the intensity of the symptoms of disease. There is very good reason to believe that the redness during lifetime, is really a great deal more intense than after death. What confirms this still more, is the fact that where a morbid action takes place in the membranes lining the nasal passages, there is a redness which is very intense during life time, and yet, if the same persons are cut off by an attack of bronchitis, the redness ceases; therefore, it is very probable that inflammation during lifetime is more intense. This is general with regard to inflammations of the mucous membranes. Another circumstance that sometimes surprises us is, that in the early stages of bronchitis, there is a remarkable constriction of the tubes, so that you sometimes observe the nasal passages are positively blocked up; yet, on examination after death, you do not find any swelling; it is in a puffy state, but not so much as you would expect. Sometimes there is a thickening of the sides of the tubes to a considerable amount, but this is not a common circumstance. This must be referred to diffusion after death, by exosmosis, or some other means, by which dispersion takes place. The same may be said of tonsillitis. There is but little softening in inflammation of the bronchial membrane, arising from the the thinness of the membrane, and, from the disease not going on long; very extensive disease proving fatal in a few days.

The diagnosis of acute bronchitis generally is to be founded on the combination of the general symptoms and all the physical signs. The character of the cough is constant at first, and afterwards more severe in paroxysms, and the character of the expectoration is more particularly of the viscid and colourless kind, and of a saline taste. Commonly the oppression comes on suddenly, or increases more rapidly than in other forms of diseases of the chest. The amount of lividity in this stage of bronchitis is greater than what we meet with in other diseases of the chest. The physical signs are the catarrhal rhonchi; sonorous at first and afterwards crackling; the different varieties which chiefly occur are not accompanied by equal crepitation, which constitutes the chief distinctive sign of inflammation of the texture of the lungs; and besides the presence of all these things there is not any great amount of dullness. There is some dullness, but it is by no means proportionate to the extent of the dyspnœa, and in that respect it is distinguished from most other diseases of the chest. It must not be forgotten that a highly congested state of the lungs, when affected with tuberculous disease, may pass into pneumonia.

The prognosis of these diseases is serious in proportion to the amount of the inflammation; and we judge of it partly by the physical signs,—the liquid rhonchi. We cannot judge by the sonorous or dry rhonchi, because they are not sounds that can be heard across the chest. We judge, therefore, by the diffusion and extent of the bubbling and moist rhonchi, the crepitant and sub-crepitant, which are heard not only in one part of the lung, or in one lung, but over the greater part of both lungs. This shows a serious extent of disease. We judge also by the amount of dyspnœa present, as to the amount of injury done to the function of respiration, and by the symptoms of asphyxia and lividity of the surface in various parts. There is, also, another sign which is—the abatement of strength and prostration. The recovery from the half asphyxiating state will depend on the strength of the patient, and his ability to expectorate the accumulating mucus. If he do that easily he will do well. There is the greatest danger where the pulse is weak, and where there is a vesicular murmur heard throughout the chest, and in this case the patient may be said to be in the jaws of death; still, in some cases, the patients do recover from this stage; but when the cough ceases and the expectoration ceases, and suffocation is produced, you may say good bye to the patient. A sudden attack is dangerous in proportion to its extent, and likewise where it supervenes in other febrile diseases, or other pulmonary diseases. In

exanthematous and eruptive fevers the oppression is sometimes extreme and indicates death, until the eruption takes place, and then there is often singular and wonderful relief.

Now, with regard to the treatment to be employed in these diseases. In the sthenic form, where there is a hard, full pulse, with heat of skin, there is no doubt of the propriety of using the great remedy for inflammation—that is, blood-letting, both general and local; but it is not to be used extensively, for the patient does not bear the loss of a large quantity of blood. Moderate bleedings give relief, but it is not permanent. Small blood-lettings from the arms, and cupping between the shoulders, are necessary. We must, in fact, rather consider that the true termination of this inflammation is by expectoration, as this is the natural mode in which the vessels relieve themselves. And it is very rare that we can stop this termination by any kind of blood-letting. The remedy most useful, and, perhaps, even above blood-letting, because it is more safe, is tartarised antimony, given in doses of from a quarter of a grain to half, or even a whole grain, every three or four hours, in combination with hydrocyanic acid, to prevent the cough, or digitalis, if the pulse is very frequent and hard, or colchicum, if the urine is particularly scanty; and generally combined with narcotics, to quiet the severity of the cough. It is not advisable to give narcotics in the first stage. The effect of opium is to check the expectoration and increase the pulmonary congestion. You must not, therefore, combine opium with tartar emetic, as an expectorant. Opium should be given with belladonna and stramonium. It may be given in combination with calomel—in the sthenic as the asthenic form, where the stomach is too irritable to bear antimony, and where there is great tenderness at the epigastrium, and some signs of fulness, a very much loaded tongue, and disordered evacuations. Here calomel or mercury, together with small doses of opium, are often highly useful. Blisters are not suited to the sthenic state of bronchitis, where the heat of skin continues, and the pulse is very strong and hard; but even in this stage some forms of irritation may be useful. I have seen tartar emetic in this case, rubbed over the surface of the chest, produce a copious pustulation, affording more decided relief than blisters. The mode of doing this I have before mentioned. After rubbing in the tartar-emetic with a piece of flannel, place a bit of flannel, soaked in the solution, on the chest; then place a piece of mackintosh cloth over it: this has the effect of keeping up an action like a warm poultice. This is actually an irritating poultice, and causes pustules in great quantity. This may be used where the strength is too low to bleed, and where you do not like to apply blisters, which often increase the fever, until the blisters rise.—But when the inflammation has given way, in some degree, when the pulse has lost its hardness and the skin has lost its heat, and something like lividity begins to appear; when the expectoration becomes somewhat opaque, then blisters may be used freely, and give most effectual and permanent relief. Small blisters often cause quite as much irritation as large ones, but they do not produce that effectual discharge on which the great efficacy of the blister depends. In this case too, as the acute stage begins to decline, and the symptoms become more asthenic, then it is of great consequence to give remedies to promote the act of expectoration. The remedies most useful are salts and senna, citrate of ammonia, and where there is great difficulty in the expectoration, carbonate of ammonia and squill, and various other means to keep up the strength. It becomes sometimes necessary to give not only carbonate of ammonia and æther, and other stimulants, but where the patient is gasping for breath you must give brandy and wine to keep the patient alive. The good effects of this treatment are generally manifest in the general symptoms before they become perceptible in the physical signs. The pulse becomes firmer and the countenances improves, becoming less livid, the breathing less laborious, and the expectoration more easily thrown off; after a time the improvement is indicated by the physical signs. The greatest care should be observed in the employment of the antiphlogistic treatment in the asthenic form of bronchitis: cupping, or a few leeches, or blisters, instead of drawing blood, may be used in the early stage. Tartarised antimony, too, may be given with some stimulant expectorants—salts of ammonia and others. Opium may be more freely used in the asthenic form of bronchitis. Sometimes æther and hot brandy and water are necessary to enable the patient to expectorate, and in young children mercurial purgatives and emetics are of great use.

Chronic inflammation of the air passages may arise from the acute disease. At the latter stage the fever subsides or becomes much diminished; the pulse loses a good deal of its hardness, yet it continues frequent, and the expectoration continues, but it has greater opacity. This catarrhal inflammation also affects the nasal passages, and sometimes there is permanent chronic inflammation in them, accompanied by purulent discharges, and sometimes ulceration, even affecting the bones of the nose; and sometimes too it is connected with exanthematous vesicular inflammation affecting the lining of the nose. A bad odour seems to arise from the action of the air on the secretion in chronic bronchitis. Chronic bronchitis is not at all uncommon in the slight form, and it often arises from imperfectly cured acute bronchitis. Bronchitis may continue—when not treated as it ought to be—and end in the severe kind.

It frequently happens, that where persons are affected with bronchitis they let it go on, and, neglecting the treatment, they expose themselves to cold and drink intoxicating liquors, which has the effect of keeping up the chronic form. Coachmen, coach-porters, and others, are often labouring under bronchitis, kept up by continual exposure to cold and their habits of excess. I need not dwell long upon the symptoms of this disease. The fever is very slight, perhaps only a little at night, and the cough comes on more in paroxysms or less constant. Generally the expectoration is of a compound character, consisting of round masses of an opaque colour, sometimes purulent with little shreds of solid matter, and often liquid in it. When the expectoration is copious and purulent, as it sometimes is in bronchitis, particularly in that supervening after exanthematous or eruptive and hectic fevers, it is necessary to resort to physical signs; you find the absence of tubercles, and you find the various catarrhal rhonchi shifting and changing about from part to part, not permanently fixed in any one spot. The emaciation is generally less in hectic fever than in phthisis.

In all cases where there are expectorations and the general symptoms I have been describing, you always find some signs of disease in the texture of the lung, either manifested by dullness or impeded respiration; and, as I have before told you, there may be, as the causes of bronchitis, emphysema of the lung or organic diseases of the heart. A very formidable kind of common bronchitis is often induced by habitually inhaling dust from the air, to which many persons are exposed in certain occupations. The lining of the tubes becomes thereby very much inflamed. There is ulceration in chronic bronchitis, accompanied by organic disease of the bronchi. Chronic bronchitis is often induced by habitually taking in poisonous dust, and it frequently occurs among needle-pointers, stone-cutters, and others who are continually breathing in irritating matters with the common air. In these cases, the disease comes on gradually increasing, and dyspnœa and cough follow. Sometimes there is purulent albuminous expectoration, with little shreds of lymph in it. Sometimes this disease extends to the structure of the lungs themselves, causing consolidation of the lung, and if this is extensive, as it sometimes is, it terminates, in some cases, in consumption. Chronic bronchitis, in young persons, may follow measles, small-pox, and scarlatina, and this is a more serious form of disease, because the inflammation is here more intense.

The morbid anatomy of bronchitis presents more varieties in colour than anything else; and in very rare cases there are ulcerations. The prognosis of chronic bronchitis depends on the amount of disease, and its complication with other diseases. In simple chronic bronchitis, blood-letting is often necessary where the patient is plethoric. Local blood-letting, cupping between the shoulders, or the application of a few leeches to the top of the sternum, is often enough. The chief remedies useful, are, external counter-irritation, combined with remedies to improve the state of the constitution. A succession of blisters applied to the chest is often useful, where the expectoration is excessive, and of a somewhat purulent character, and without fever; it is sometimes also useful to employ mineral acids, and in these cases it is often found that the inhalation of iodine vapour is useful. In most cases it is proper to use purgatives and expectorants. Narcotics may be given from time to time. It is of great consequence, in chronic cases, to attend to the general state of the functions, and if there is anything like gastro-enteric disorder, to give small doses of mercury to conduce to the proper action of the liver and keep the bowels open, and to remove any gouty tendency that often occurs in combination with chronic bronchitis. One of the best remedies is colchicum. It is important to observe carefully the diet: generally speaking, it should be simple, but not too starving; mild, farinaceous food, and a little of the lighter kind of animal food, seems best. It is useful to avoid stimulating liquors, and to avoid other sources of irritation, and also extreme heat and cold—taking care not to allow the patient to be exposed at night, or to the east winds.

ON THE REFLEX-FUNCTION.

The following are Extracts from an Abstract of Dr. J. W. Arnold's German Work "On the Theory of the Reflex Functions, as given in the Medico-Chirurgical Review for January last.

The object of this book seems to prove that the theory of the reflex-function is no novelty. The author goes so far as to state, that if M. Hall and J. Muller had studied the history of their science with sufficient care, we should have been spared much of the trouble and fuss occasioned by the regeneration of a doctrine "as old as the hills."

A Succinct View of the Reflex-Theory of Hall and Muller.

Hall distinguishes four species of muscular motion. The first is the voluntary: the will, taking its origin in the brain, and free in its action, extends its influence along the spinal chord and the moving nerves in a direct line to the voluntary muscles. The second is the respiratory, which has its origin in the medulla oblongata. The third species of motion is the involuntary; this depends on irritability, and requires the immediate action of an irritant on the muscular fibres. These three species of muscular motion have been known for a long time, and were the only species known, according to Marshall Hall. According to this physiologist, however, there is a fourth species which still continues, after the voluntary and respiratory motions have ceased by the removal of the brain and medulla oblongata; this species of motion is connected with the spinal marrow, and disappears as soon as this organ is taken away, though irritability still continues. In this species of muscular motion the acting influence exists not in a central part of the nervous system, but at a distance from it. It is neither voluntary in its action, nor direct in its course; it is, on the contrary, excited by peculiar stimuli, which, however, do not come into immediate contact with the muscular fibre, but with certain membranous parts, from whence the impression is conducted to the spinal marrow, is thence reflected, and either again reaches the part on which the impression took place or some other part remote from it, where muscular contractions now take place. This is M. Hall's reflex-motion. It exists as an uninterrupted muscular action, as a power which presides over organs, which are not really in a state of motion, and in some, as in the larynx, it presides over, and preserves an opening, whilst in other parts, as in the sphincter muscles, it keeps the organs closed. In the reflex function the muscles are excited by a stimulus, which is conducted mediately and indirectly in an arched and reflected course along the superficial nerves under the skin or mucous membrane to the spinal

marrow, and along the muscular nerves from the spinal marrow. The motion that takes place in this way requires that the connection with the spinal marrow be uninjured. M. Hall supported his theory chiefly by experiments on cold-blooded animals, which go to show that, after decapitation, suitable and determinate motions take place in consequence of the action of external stimuli, but not from free impulse, but that these motions cease, as soon as the spinal marrow is removed. M. Hall draws from his experiments with decapitated animals the following conclusions, which are to serve as supports and illustrations of his theory.

1st. Sensation can act for the production of muscular motion only by means of the will.

2nd. In the experiments with the removal of the brain and the medulla oblongata, the will is no doubt abolished, but not the moving power.

3rd. In cases where sensation is shut out and the will is abolished, the external impressions which occasion pain, act on a property of the nervous system, which is different from sensation.

The observations according to which frogs and salamanders thrown into a state of rigid spasm by nux vomica or opium, may be divided into three parts, namely, the head, the anterior, and the posterior extremities, without the increased irritability and spasm ceasing, should, according to M. Hall, sufficiently prove, that the phenemena, which he ascribed to the reflex-function, depend neither on sensation, nor on the will, nor on irritability. He considers it evident that the spasmodic phenomena in tetanus are no voluntary motions, that they obey the same laws as those motions which are observed in an animal slightly affected with tetanus, or in parts of such an animal under the influence of stimuli. It is, according to him, equally clear that phenomena which depend on the excitement of irritability, would not cease, as long as this irritability continues uninjured. M. Hall connects with his reflex-theory a peculiar theory on the structure of the nervous system, namely, of the spinal marrow and its nerves. He assumes, for instance, an excito-motory nervous system, and from his experiments infers the existence: 1st, Of a proper spinal marrow which is physiologically distinct from the chord of the intro-spinal nerves; 2, of a system of excito-motory nerves, physiologically distinct from that of the sensitive and voluntary nerves; 3, of a nervous power, the excito-motory power, which acts, being thrown in an incident direction, upwards, downwards, and backwards, in reference to the proper spinal marrow, the centre of the excito-motory system.

Thus, then, the entire spinal marrow in vertebrated animals consists of two parts, the first being the intervertebral chord of sensitive and voluntary nerves, which go to and from the brain, as their middle point; the second has been called the true spinal marrow and is excito-motory. This is the axis of the system of excito-motory nerves, which are generally, but probably not invariably, connected with the former.

Theories.

The parts of the excito-motory system of M. Hall are:—

1. The incident excitory branches: 1. The trifacial.—2. The pneumo-gastric.—3. The posterior spinal nerves.

2. The true medulla oblongata and spinal marrow, the middle point of this system.

3. The reflecting, moving branches, as the trochlearis, abducens oculi, &c. &c.

Among the Germans, J. Muller was the first who advocated this theory. He differs, however, on many points from M. Hall. His views on reflexion are as follows: when sensations which are effected through external stimuli on nerves of sensation, produce motions in other parts, this never takes place through the reciprocal action of the sensitive and motory fibres of a nerve, but by the sensorial excitement acting on the brain and spinal marrow, and from this back on the motory fibres. The phenomenon of general convulsions after local sensations is independent of the N. sympatheticus, and is occasioned by an irritation of the spinal marrow, whereby every local, sensorio-centripetal excitement transplants itself to the entire spinal marrow and brain, and thence necessarily excites all the motory fibres. But in very many cases after local irritation of the nerves, not general but local, convulsive twitches are occasioned, which, however, must always be explained, and accounted for, through the spinal marrow, as the connecting medium between the sensorial and motory fibres. With respect to M. Hall's view, according to which no sensation takes place in the case of motions communicated through the spinal marrow, J. Muller thinks, that the reflected motions which take place on the application of stimuli to the skin after the removal of the brain, contain no proof that cutaneous irritants are still capable of exciting true sensation in the spinal marrow; it is rather the centripetal conducting of the nervous principle which ordinarily takes place in the case of sensations, but which in this case is no longer a sensation, as it is no longer conducted to the brain, the organ of consciousness. During health many reflected motions follow through cutaneous irritants, which do not reach consciousness, as true sensations, but still are capable of making violent impressions on the spinal marrow. But Muller thinks that M. Hall goes too far in assuming that, in health, every motion in consequence of a true sensation is produced by the will, and that all excitements of sensible parts in reflected motions are without sensation; for the reflected motions of sneezing, coughing, and several others follow from real sensation. According to Muller an irritation of a sensorio-spinal nerve in the first instance effects a centripetal action of the nervous principle towards the spinal marrow. If this can reach the sensorium, it is a sensation, attended with consciousness. But if, on account of a division of the spinal marrow, it does not reach the sensorium commune, it still retains its entire power as a centripetal action to the spinal marrow. In both cases, a centripetal action of a sensorial nerve may produce a reflex motion. In the former case the centripetal action would be at the same time a sensation, in the latter not, but it suffices for a reflex motion. We possess, according to Müller, no certain facts to prove that the spinal marrow is endowed with sensation independently of the brain and medulla oblongata. Reflex motions after cutaneous irritations in decapitated animals cannot, according to him, be reckoned among these, and if decapitated frogs evince, on the application of a cutaneous irritant, any thing determinate or suitable in their reaction, this phenomenon only occurs when the division through the spinal marrow occurs at its commencement.

Modern Physiologists on the Reflex-Function.

Volkman objects to the assertion that decapitated animals continue at rest in the place where they are put, and continue therein unchanged to the extinction of the very last spark of life. He has proved also by experiments that a longitudinal division of the spinal marrow does not prevent the extension of the reflex-motions over all the muscles of both halves of the body, so long as any part of the proper spinal marrow continues connected in the middle line He also infers from his experiments that the reflex-motions have the character of aiming at some end, that their extension depends chiefly on the strength of the irritant and on the degree of irritability; that in the reflex-functions the posterior roots of the spinal nerves serve exclusively as exciting, the anterior exclusively as reflecting nerves; that the activity of the irritants which produce reflex-motions, is modified and increased by the peripheric expansion of the nerves; that irritation of the sympathetic nerves of frogs excites widely extended reflex-motions; that the conducting of the nervous principle from the periphery to the central organs and from there backwards to the peripheric nervous expansions, is not subject to the same laws as the conducting process in the nerves, it not being confined to the course of the nerves. According to Volkman, the present state of our knowledge is not sufficient to prove that all the reflex-motions of decapitated animals, and especially of decapitated amphibia, go on without the co-operation of mind, as the principle of sensation and of the will.

Carus is the next physiologist whose opinions on the reflex-function are worth considering. With respect to the term "reflexion," he says that as a term it is unobjectionable, only that we should beware of introducing into nervous life the idea of some new distinct agent. According to Carus the spinal marrow contains not merely primitive fibres, but also a pulpy mass, and in so far peculiar feelings and re-actions appertain to it just as much, as the capability of conducting; nay, by this mass the oscillation of the primitive fibres passing through it must undergo a modification every time in a certain proportion. Hereby also it may be understood further why, when the oscillation of the innervation in the spinal marrow to the brain is interrupted by any cause, as, for instance, directly by dividing it, nevertheless nervous feeling and re-action must still proceed from the spinal marrow itself. Carus rejects the division of the nerves into spontano-motory and reflecto-motory; he further says that, by M. Hall's theory, physiology has been encumbered with a number of superfluous names; he asserts that the admission of reflexion, as a distinct power, is altogether needless. According to him, nothing whatever occurs in this case in the central nervous system, but what occurs repeatedly and almost universally in the sympathetic nervous system,—viz., that the sensible nervous oscillation, instead of proceeding along from the peripheric bending of the primitive fibres to the central bending, meets the nervous mass on its way, on which feeling is concentrated, and immediately springs round to reaction, so that it extends itself from here through other radiating primary fibres back to the periphery, and gives rise to convulsive twitches, &c. &c. Several other distinguished physiologists have expressed themselves in very decided terms on the merits of the reflex theory. To detail their opinions on this subject would be altogether out of place in our Journal.

The term Reflex old.

With respect to the early use of the term "Reflex," we know that Haller has frequently used it in his Physiology. Unzer, who published a work on physiology in 1771, uses the term many times. His definition of reflexion is, a change of an external into an internal sensible impression. Treviranus also uses the term in his Biology or Philosophy of Living Nature, published at Gottingen, 1818. Fred. Arnold, in his work entitled Kopf-theil des Vegetativen Nervensystems, published in 1830, makes frequent use of the term reflexion; thus his experiments induced him to admit that the action of light does not take place immediately on the retina, but that it is *reflected* through the nervous expansion in the eye to the iris, and that this *bringing back* of the stimulus of light takes place through the brain. He also distinguishes the motions of the tympanum, which arise in consequence of an irritation *reflected* from the auditory nerve to the moving apparatus of this nerve, from those which immediately follow through the vibrations of the air. The sympathy of the thoracic and abdominal organs with the brain and organs of sense he also accounts for on the principle of reflexion.

The facts of reflex theory old..

When we come to consider the facts on which the reflex-theory is founded, we shall find that they possess still less of novelty than the theory itself. It is long known that the life of certain animals may sometimes continue for some time without a cerebrum and cerebellum, and that amphibious animals, after taking off their head, are still capable of making suitable movements; they seek to avoid injuries, and fly from dangers. Several facts appertaining to this point are to be found in Haller, Kaau, Boyle, &c. We shall here cite a few. Robert Whytt, proving that the nerves are the sole organs of sensation, says, if, immediately after decapitating a frog, one of the toes of the hind-foot be wounded, either very slight motion, or none at all, takes place in the muscles of the foot. But if we pinch or wound this animal's toe ten or fifteen minutes after the head has been cut off, then, not only the muscles of the leg and thigh, but those of the entire body, are thrown into strong convulsions, and the frog sometimes springs up violently. In this case is not the irritation of the thigh, immediately after the head is cut off,

ineffectual in producing any motion in the muscles of the thigh and foot, on account of the great pain occasioned by removing the head? Whereas the muscles are thrown into motion by wounding the toe fifteen minutes after removing the head, because the pain is now so much diminished, that it no longer prevents the animal from being sensible of his wounded toe.

Gilbert Blane also has quoted some facts which are very decisive on this point. Marshall Hall has quoted them in his work on the Nervous System. Their object is to shew, that instinctive actions, even in animals possessing a brain and nerves, do not depend on sensation; that is, that instinctive or automatic acts may be performed without the intervention of the sensorium commune, and therefore without sensation or consciousness. Treviranus was induced, by experiments such as these, to deny the assumption that the faculty of association is merely a property of the brain. Legallois states it as a well-known and proved fact, that birds, whose heads were cut off, continued to live and even to run about for some time after. Mayer also ascertained the fact that decapitated animals are still capable of forming determinate and suitable acts under the influence of iritatants. Thus it is evident that the facts by which M. Hall supports his theory were well known long before his time, and were employed to throw light on the doctrine of the nervous system.

The Reflex-theory of the Physiologists before M. Hall.

From what we have just seen regarding the use of the term "Reflex," and the early knowledge of the facts on which the reflex-theory rests, it is abundantly evident that the theory itself is not altogether new. Several authors might be adduced here, who at a very early period expressed themselves more or less in the sense of the reflex physiologists of modern times, and it might thence be shewn that the facts on which this theory is now made to rest, were from a very early period explained in the natural way.

Haller distinguishes from the motion occasioned by muscular irritability those motions which take place when the head or brain has been removed or destroyed, and which continue as long as the mere spinal marrow or medulla oblongata remain. We have already seen that Sir Gilbert Blane was cognizant not only of the facts on which this theory rests, in the acknowledgment of M. Hall himself, but that he has expressly stated that instinctive or automatic motions may be performed without the intervention of the sensorium commune, and therefore without sensation or consciousness. Robert Whytt distinguished a feeling and a rational principle of the soul, and accounted for the phenomena which take place in decapitated animals in this manner: he said that the soul, not by rational motives, as in the case of the action of the brain, but by its feeling principle, perceives external irritants, and then acts on the organs. The various sympathetic phenomena, which are occasioned by irritants, are the consequence of particular sensations, which are evoked in certain organs, and thence transferred either to the brain or to the spinal marrow, in which organs he generally seeks the true origin of all sympathetic motions. We have already had occasion to refer to the experiments of Legallois, who has concluded, from his observations on decapitated animals, that the principle of sensation and motion in the trunk and extremities has its seat in the spinal marrow, and that the life of every individual part of the trunk in particular, depends on the part of the spinal marrow from which it receives its nerves. Burdach also, in his work on the Structure and Life of the Brain, constantly explains many of the vital phenomena in a similar manner.

We have already alluded to the distinction of the various species of muscular motion according to Hall and Muller. To enquire into the adequacy and correctness of this distinction would lead us too far from our subject; one circumstance, however, in the division we cannot help animadverting on. When M. Hall designates the involuntary as the third species of muscular action, and states that this depends on irritability, and requires the immediate action of a stimulus on the muscular fibres, one is at a loss whether to feel more astonished at the bad logic displayed in the division of the motions, or at the confusion of the common ideas and the abuse of the most ordinary terms in physiology. Under the head of involuntary motions are understood those which are not subject to the will, do not proceed from it, and are not determined by it. That these depend on irritability no physiologist will maintain, who knows that the causes producing involuntary motions are much more deeply seated in organic life, even though the term irritability be not restricted in the ordinary sense of physiologists to muscular irritability.

(To be continued.)

EXTRACTS FROM FOREIGN JOURNALS.

From the Berlin Medicinische Zeitung, for "the Medical Times."

Cure of Enuresis Paralytica, by Dr. Steinbock.—This physician gives some cases in females after parturition, caused by undue pressure of the head of the child during labour, on the neck of the bladder. One case was cured by secale cornut. grs. iv, pulv. canthar. gr. 1-6th tertiis horis. Some others, more obstinate, in old men, by ℞. Decoct secale cornut. (ʒss.) ℥iv. infus. belladon (℈i) ℥ij, acid phosphoric ʒij, ext. nuc vomic gr. v, syr. mannæ ℥i, M. cochl. i, ampl. omni bihor.

Case of Wound in the Throat, in which the trachea was severed just below the larynx, and the œsophagus wounded in its anterior wall, the wound was united by the *bloody* suture, but the stitches were torn out, so that union could not take place; there remains an opening of a finger's breadth in the anterior wall of the trachea. The man is capable of speaking only when the opening is closed by means of a *pelote* of India rubber.

Foreign Bodies in the Bronchiæ, by Dr. Wandersleben—A. Bauer, æt. 40, a brandy drinker, one evening taking potatoe soup, was suddenly seized with difficulty of breathing, so that he fell down; he leaped up again, tore open the window, and cried for air, which he could scarcely do from a continual violent cough. He came to me the following morning, and stated that he had swallowed something which had now sunk down and stuck in the chest; it continued to prick him between the 4th and 5th ribs; there was also a sense of suffocation, and constant cough; it was apparently a piece of the wooden spoon with which he had been eating, of which a piece was wanting. The next day fever came on, and he kept his bed. On the 9th day, he coughed up at once more than a glass of pus, mixed with some blood. The pricking had left him, but the cough and expectoration were considerable, the breathing quick, and much ill smelling perspiration, the pulse small and quick, the strength and flesh decreased; the legs below the knees œdematous. By auscultation it appeared to me, judging from the pectoriloquy, that there was a tumour as large, at least, as a fist in the right lung, and I was strongly of opinion, that the foreign body was therein. In the 6th week the strength had decreased so much that the antiphlogistic treatment was discontinued, and bitters, with quinine, were given, from which arose a desire for food, which the patient gratified so abundantly that cardialgia came on, inclination to vomit, and then vomiting. From the strainings he again felt a violent pain in the right breast, near to the sternum, increased difficulty of breathing, and cough so continual that he feared suffocation. After a fit of coughing he felt something hard in his mouth; it was the absent piece of wooden spoon. From this hour he began to amend, was soon convalescent without more physic, and is now sound. The piece of wood was triangular, about the size of a medium hazel nut.

Case of Tracheotomy, by Surgeon Hundhausen.—He performed the operation on a weaver. æt. 24, who some days before had let a cherry-stone slip into the trachea. "The patient had little pain, insignificant cough, but some anxiety, and pointed out accurately the place where the stone lodged, which from the cough slipped up and down. At the moment of the operation, it sat low down in the trachea. After the opening of which (three rings were divided) the stone was not brought by the cough high enough for the opening. I waited until the following day, when I passed my little finger into the trachea, and thereby caused a violent fit of coughing, so that the stone according to the account of the patient, was brought high enough in the trachea. I renewed this experiment, and the third time I left the finger so long in the trachea tha the cough became very violent; I then suddenly withdrew the finger, in consequence of which the stone was at the same moment ejected through the wound by the violent cough, the wound was then closed, and the patient was cured by the 14th day."—Another case, a boy, æt. 5, got a piece of bone into the trachea. Most dangerous symptoms immediately came on. Surgeon Scheller performed bronchotomy without success. The boy died in 16 hours. By the section the foreign body was found beneath the bifurcation in the right branch of the trachea.

Induratio thecæ cellulosi Colli; the Pseudo-Erysipelas subtendinosum Colli Ludwigi, sive Angina Externa: communicated by Dr. Advena.—This disease occurred in the third quarter of this year in the neighbourhood of Dr. Advena, it had a dangerous, and in many cases a fatal course; he communicated the following remarks. As the appearance of this disease is of rare occurrence, and as he has found it barely mentioned but by one medical author, he begs leave to give the following short description. This disease, as observed by me, commenced with gastric symptoms; the child complained of head-ache, want of appetite, coated tongue, light feverish condition, difficulty of swallowing. In all the cases observed by me, a hard tumour very soon developed itself on the right side of the neck, in the cellular tissue surrounding the submaxillary glands, while the gland itself was free from swelling. This tumour was characteristic, and different from all swellings of this kind by its wooden hardness, which received no impression. The tumour extended from the angle of the jaw to the chin, and frequently drew into the hardening process the cellular tissue between the top of the trachea and cavity of the mouth, as well as the muscles of the neighbourhood. It became, therefore, as though the tongue rested as it were upon a hard floor, and that from the inner circumference of the inferior maxilla into the cavity of the mouth, a hard brown-like ring was palpable, with a highly red, and sometimes blueish discolouration.—That the capability of opening the mouth, speaking, and swallowing, was nearly impossible, need not be mentioned. It is especially remarkable, that on the exterior of the neck, the tumour was not reddened, but natural. In the first three or four days of the disease, the fever was moderate, the children ran about, shewed little sense of pain, sleep was quiet, thirst moderate, secretions and excretions regular.—Were the disease left to itself, the skin became gradually red, the tumour beneath the tongue softer, in many places also in the neck externally, and apparently fluctuating. Then the tumour broke into the cavity of the mouth, or into the interior of the neck. In the first case a profuse ill-smelling matter was poured out.

There arose hectic fever, with a putrid nervous character, and about the 10th or 12th day from the commencement of the disease, death with coma supervened. In the second case, when the tumour burst into the interior of the neck, the large blood vessels were soon corroded, hæmorrhage took place from the neck, and death quickly followed. I was called to two cases of this last kind, where early medical aid had been neglected by the parents; on my arrival, in each case, I found the child lying dead from profuse hæmorrhage. To whatever belongs the prognosis and *therapie* of this indurated cellular tissue, it is evident that it is no glandular swelling, either in its tedious or favourable course. There is always "periculum in mora," and all must be hazarded to prevent its taking a malignant course, that the bursting of matter inwardly be prevented, and also that the whole curative endeavours may be so directed that the local diseased process be quickly and powerfully derived from the interior of the neck to the surface, by means of powerful external irritants. The only medical author by whom I find this disease mentioned, advises the following topical applications.—"There ought first to be laid upon the induration, a *vesicatorium* of two or three fingers breadth, and one finger in length, according to the size of the swelling. After 12 to 24 hours, according as the symptoms are pressing, the epidermis must be removed, and upon the bare place must be laid a completely covering *plumasseau,* which must be moistened with a solution of sublimate ℈i to aq. distil. ℥i, and made secure with adhesive plaster and compresses. This remains 12 to 24 hours, a slough is now produced, upon which must be laid a second *plumasseau* like the first, the slough is now greyish black and thick. Upon this a cataplasm must be laid until it comes entirely away. When after these applications any hardness yet remains, so must a third or fourth *plumasseau* be laid on the suppurating surface, freed from the slough. The healing of the sore follows quickly and easily from a covering of empl. nigr."—It is evident, that on account of the large quantity of sublimate, and, therefore, from the danger of poisoning to be feared in tender children, it requires great consideration. And as this disease shews itself for the most part in children from the second to the eighth year, so an opportunity only once offered itself in a man æt. 30, to test the effect, as quickly as might be wished, of the sublimate. My mode of treatment now consists in the application of a suitable number of leeches, on the first manifestation of the symptoms, together with inunction of ung. hydrarg. employed partly against the nature of the disease, partly to operate against its greater extension; after this is done, a blister of suitable size is applied upon the swelling. After the removal of the epidermis, I use a stimulating cataplasm to hasten the secretion of pus. As soon as fluctuation in any measure is perceived, even when not an entirely ripe abscess, an artificial opening is made, charpie laid in the opening, and warm cataplasms employed, until, after plentiful discharge of pus, all hardness has disappeared. By the manner above sketched, all the little patients entrusted to me were cured. I must yet mention one particular case, where the induration had seized the back, instead of the neck, and where the disease was removed by this treatment. I can, with tolerable certainty, affirm that, together with this disease, the patients bore upon them the types of a scrofulous diathesis.

Cure of Tape Worm, by Dr. Karsten of Perleberg.—Dr. Karsten praises the method of cure of Dr. Wolfsheim, the basis of whose prescription is the powder of male fern; in ten years experience he has not had a single case of failure. Dr. K.'s plan is to give a mild infusion of senna and rhei the day previous, to produce two or three stools, so as to free the bowels from fæces; the diet low. The next morning, about 6 A.M., he gives a tea-spoonful of the pulv. Filic mas., prepared from the fibres and medulla, omni hor., between 11 A.M., and 1 P.M., the expulsion of the worm follows without further means. Dr. Roeklin of Saarbrucke, also has for many years used the method of Wolfsheim, and says he has succeeded in many dozens of cases; he has lately given the powder in the dose of ʒiij at once, in an infusion of linden flowers.

Vicarious Menstruation from the Gums: observed by Dr. Hildebrand, Circle Physician in Preuss Holland. Madam F. of strong, but low frame, and florid countenance, æt. 42; married 15 years, without being once pregnant, formerly menstruated regularly, had never been ill, except once, from intermittent fever. After about a year's irregularity of menses, being scanty and less frequent than the regular period, she remarked, as she again expected the commencement of the menses, a bleeding from the gums. In the supposition that she had in some way hurt them (the gums) in eating, she did not at first regard the hæmorrhage, but as it did not stop, she sought medical aid. After long endeavours it was at length stayed. This hæmorrhage shewed itself at four weeks' intervals three times until the end of the *semester*, and, indeed, each time becoming more profuse: during this time menstruation had not occurred. The hæmorrhage at each time is at least one quart and a half, and is, judging from the manner of its flowing, venous. This affection, at the end of the *semester*, still continues. (The measures that have been employed to call forth the menstruation in a regular manner, are not mentioned.)

Hæmorrhage from a burst Varix, by Dr. Hesse, of Emmerich.—A woman in her 15th pregnancy, had suffered for a long time, by her husband's account, from a tumour in the left nympha. On the 7th of Nov., the woman, who had then reached the end of her pregnancy, in the afternoon, lay down on her bed to sleep, after having taken food with appetite, and performed her household labours well and cheerfully. All at once so violent a hæmorrhage came on, that her husband felt it necessary to call the midwife, who quickly appeared and knowing the danger, caused me to be summoned. I found the woman already moribund, the bed and floor full of black grumous blood, and on exploration found the os uteri closed, the vagina dry. The woman immediately expired. The Cæsarean section was quickly performed by me, assisted by Surg. Lengensdorf. The child was dead, the uterus empty of blood, the placenta adherent in its entire circumference; the hæmorrhage consequently was not from the uterus, but proceeded, as was found by further examination, from the tumour before-mentioned, suddenly bursting. There was nothing more remarkable about the uterus. On the other side, the left nympha was very large and relaxed, by pressure on which there flowed out from a large aperture black tar-like blood: the aperture was nearly half an inch in the upper part, near to the commissura superior. The opening led into several veins, sideways as well as downwards, deep into the perineum. This tumour was, therefore, nothing else than an enormously large varix.—A similar case of ruptured varix in the thigh, suddenly fatal, was observed by Dr. Hiller, of Schoneck, in a pregnant women at the end of her pregnancy. She died before medical aid could be procured. The saving of the apparently living child, could not be attempted until it was too late, in consequence of the refusal of the husband.

The Larvæ of Flies in the Eye, by Dr. Eitner.—On the 14th of July, some country people brought to me a boy, æt. 3, for medical examination, in whose eyes were, as they supposed, maggots. Neither the father, nor the grandmother, who accompanied the boy, knew anything more than that the child for the last two days had cried very much from pain in the eyes, and at length discovered that something crawled therein. I laid the child in the father's lap, and removed the bandages which covered his head, and then perceived a considerable, inflamed, dusky swelling of the eyelids of the left eye, which appeared like a red ball. The inferior lid was in a great measure covered by the superior, and between both was perceived only a narrow slit. By partial separation of the eyelids — I found between them a mass of thick worms or maggots, which resembled opening tubes, like honeycomb, closely adhering to each other—these tubes appeared to open and close alternately, as the mass moved, and presented a truly horrible sight, as so noble a part as the eye, in the living body, seemed to be devoured and destroyed, as it were, by carrion. The ball of the eye could not be discovered. I confess I never saw anything so disgusting. At the first sight I was surprised. Upon further examination it was evident the larvæ were those of the blow-fly (musca vomitoria.) Their heads, which terminated in two curved hooks, were inwardly directed. After some trouble in separating the exceedingly swollen eyelids, he succeeded in drawing out with the pincette by degrees twenty larvæ from the left eye, half an inch long, and nearly as thick as a quill; they were drawn in complete integrity, although they offered some resistance, from holding fast with the hooks on their heads. They were chiefly found in the inner corner of the eye in the lachrymal fossa, (puncta?) which, after the removal of the larvæ appeared like an open fossa or purse. They were more separated along the inner edge of the eyelid, seated on the ball as far as the outer canthus. After the removal of these 20 larvæ, by the most careful examination, he succeeded in observing for a moment the cornea, which was blueish green and opaque.—The right eye presented inflammation of the conjunctiva bulbi et palpebrarum, a peculiar coating of mucus over the eye-ball from the inner canthus. It appeared to contain no foreign body, although that slimy coating in the just mentioned relation appeared suspicious, and caused a very accurate examination, which shewed a similar larva hidden deep in the lachrymal duct; so that the radiated part of the animal only could be observed. Its extraction was rendered difficult by the crying and struggles of the child; he succeeded at length in taking hold of the larva, the radiated part was torn away, and by repeated introduction of the pincette the rest was removed. The whole of the larvæ were alive when the last was extracted from the right eye, and died only after having been some time in strong brandy.—The eyes were, by proper treatment, at length restored, after the cornea of the left eye had been covered with ulcers, leaving a nebula, the size of a linseed, which in time may disappear.—Undoubtedly a blow-fly had been attracted by a sore in the inner corner of the left eye, and during sleep had deposited a number of ova therein, and the boy from the neglect of cleanliness by his parents, and the irritation thence arising, had rubbed them still deeper into the eye. The larvæ had

certainly very quickly crawled out. As proving the extraordinary quick growth of these maggots, we learn from Redi, that they are completely developed in a few days: on the following day they are so small that 25 to 30 hardly weigh a grain; yet, on the 3d day, each maggot weighs 7 grains—within 24 hours becoming 200 times heavier.

TO CORRESPONDENTS.

Mr. Smee.—*We have received this gentleman's case, which had however been already noticed for our columns.*

S. T. B.—*The causes of this malady are so various—the effects may be so complicated—that no remedy can be wisely recommended, except every circumstance appear in judgment. Our friend, therefore, if he regard his safety, will neither look into books for a remedy, nor trust for one to a correspondent. Let him at once go to a respectable practitioner, before whom such cases are every day coming. All such books as "Manhood" are infamous traps in which—to catch money—even health is made the sacrifice.*

Mr. Llignrah.—*Our correspondent has not clearly expressed his meaning; we can, therefore, not catch his difficulty. If there be offspring from violation, the guilty party will not, therefore, cease to be liable as to the consequences. The probability of offspring under such circumstances, is quite another question.*

Blue Ink.—*A correspondent assures us, that a subscriber answered last week will find all he needs by a reference to the specification of Stevens' Writing Fluid, in the Rolls Office, Chancery Lane, for April,* 1837.

Mr. B. Upton *will perish of our panegyrics and be the Marsyas of our praise, if he persist in writing such picquant epistles. There are hints in his jests that are wisdom to us, and will not be overlooked. Our own estimates of character are very nearly* his.

T. B.—*The principle on which testimony is demanded in criminal prosecutions is, that it is a public duty: except, therefore, where a special statute enacts payment to a witness, no remuneration can be enforced. The attendance at the inquest* must *be paid for, as our correspondent will see by a reference to our Abstract of the Medical Witnesses' Act, where the whole matter is tersely explained.*

Mr Bradshaw.—*The question requires an invidious answer.* We *think, for our correspondent's purpose,* Dr. Copland's.

We have laid the case of M. D. *before our* legal *collaborateur, and hope to give a full answer next week.*

A "Friend," *whose name we have, recalls our attention to the recent book of Mr. Clendon, making a charge against that gentleman which, we suppose, has only to be named to secure refutation. It is asseverated, then, that in the "Medical Gazette," No* 37, *June 4th,* 1841, *Mr. T. Tomes wrote an article "On the Construction and Application of Forceps for Extracting Teeth," which is* in petto *the work of Mr. Clendon. The extracts there recommended for the first time to the public, are, it is charged, the same extracts Mr. Clendon claims as his own, made by Mr. Tomes' instrument maker, on the precise pattern of Mr. Tomes' instruments. Justice requires this notice of the accusation: our pages will, of course, be open to Mr. Clendon for its answer.*

THE MEDICAL TIMES.

Saturday, April 22, 1843.

Nobilitas sola est atque unica—Virtus.
Juvenal.

The quiet observer, free from faction's trammels, cannot have failed to observe that many sound, nay, noble improvements, not a little needed, have fallen into great discredit, and been thrown far into the future for their realization, by the notions of lowness, selfishness, and vulgarity, which, from various causes it befits us not to speak of, have—truly or falsely—been associated with the ominous name of "Reform." This prejudice, or prepossession, has not been without effect, in marring the labours of those who have sought with us some important changes in British medical polity. While our warcry of "Medical Reform" has met a cheering and supporting response from those predisposed in favour of the name, or acquainted with the true import of our demands—it has been heard, we must own, with distrusting emotion and ill-suppressed dislike, by those timid, sensitive, respectable persons, who, without paying much attention to the special matter before them, at once placed to its debit account the disadvantages they had been accustomed to connect with the more general subject in which it was supposed to be comprehended. To set at rest the scruples and fears of so worthy a portion of the community, is, we believe, no mean part of the policy of medical reformers; and we can sincerely asseverate for ourselves, that, if we are not lamentably in mistake as to what is sought under the name of Medical Reform, we may truthfully declare that we seek only what is *good*, what is *just*, what is *high*, what is *ennobling*, what is worthy improved science, and enlightened man! If we are mistaken in this, we can only affirm that *we* are not Medical Reformers.

What—let us enquire of those who connect lowness with our cry for improvement—are the broad principles on which must be based all satisfactory alteration, according not only to us, but to *all* Medical Reformers? The first answer that this question promptly draws is, that the whole composition, and especially the government of our profession, should be an affair of merit—of merit not thrust on an individual from without—not derived from the accident of wealth, or favour—but created, earned, achieved from within. There may be different opinions as to the best principle on which honours should be conferred or possessed, in the *political* state; but in a profession dedicated to science and learning, which lives, moves, and has its being simply as a scientific body, mind must be the over-ruling consideration: its aristocracy and *monarchy* (if it have one) must be an aristocracy and monarchy of talent: all else would be heterogeneous, jarring, and *unjust*. Wealth and birth, God knows! have enough of temples in which homage is paid to them: self-created worth, the most valued gem under the vault of heaven, has few votaries, and fewer shrines (poor as they are!). Let there at least then, we cry, be one spot in the social map where mental worth can be essayed at its true price,—let there be one asylum and home for the despised cultivators of science—those men whose every further step in knowledge is an advance made in the happiness of the whole human family—one temple, where the spiritual and best portion of us, in its highest revelation of itself, may claim the full amount of its prerogatives, and have due honour paid to it. This, we affirm, is at once true respectability and true nobleness.

But what, first, must be the guarantee, in our government, that it shall be composed from merit? Election by the whole body of our members is the answer. Under the present system, or one even distantly resembling it, merit is a chance quality in the matter of promotion. This is one of our grand objections to the present order of things. If we go to the College of Physicians, eminence is the consequence of mammon-worship, or Presidential fear, or favour. The man who can pay for keeping terms at Cambridge or Oxford, though an idiot like —— or ——; who can play the sycophant like ——, or the troublesome brawler like ——: these are your men qualified for high positions in Pall Mall. Go to our London College of Surgeons, and the man who has eleven enemies, though a Hunter or a Carpue, will be excluded from the Council—and the man with eleven friends, though a —— or a ——, will be admitted. Travel to those well-meaning dotards whose whole claims to distinction are the alacrity and profundity of their powers of dinner-eating—we mean the worshipful apothecaries of Puddledock—or to any other clique of our medical corporations, Scotch or Irish, and you have much the same principle of choice for their associates. This is your mode of electing the chiefs of learned scientific men—a mode which, we dare the most timid conservative, the most anxiously sensitive as to respectability, to ponder on, without pronouncing on it his emphatic condemnation. This is the system, we contend, that is opposite to the respectable: it is not only not respectable, but essentially vulgar.

The choice of a whole profession! What an ennobling contrast! *Laudari a laudato viro* is a high distinction, but *laudari tantis laudatis!* The man so praised, and so chosen, is indeed an honoured character. The worth that won him the distinction is magnified by the character of its acknowledgment. The good and worthy man, chosen under the dwarfing influence of present arrangements, becomes suspected, and his merit distrusted, from the known power of intrigue and sycophancy in all medical corporative appointments. Under the *regime* we advocate, we should have a giant-making spirit pervading the world of medical science. The choice made by us, collectively, would elevate elevation, and while giving distinction to a deserving brother, we should have the glory of his augmented reputation reflected on ourselves. We should at once honour and be honoured in the act, which would not only be the *herald* but *creator* of worth. Here we recognize the *classic* spirit of Medical Reform. Oh! we are far indeed from the inspirations of the low, the sordid, and the vulgar. The *gentleman* and the *scholar* have no sympathy which is not secured by this ennobling aspect of the great innovation we labour for.

But what would be the influence of this elective power on ourselves? At present, we are affirmed as much as (more than words)—*acts*—*can* affirm it, to be serfs in the society in which we have thought proper to place ourselves: to be men who, as medical practitioners, ought not to have the power entrusted to us of any share in our own management: who must be guided in one portion of our actions, not by any judgment we (some twenty thousand) may happen to possess, but under the discretion, coercively and compulsorily applied, of some twenty or thirty self-appointed and irresponsible rulers.

In all that regards, in truth, the government of our profession, we are in the position of people who are under an injunction not to use their intellects. Nay, we are pronounced, in reference to such matters—and are obliged to occupy the position of people, *non compos mentis*,—we cannot, it is decreed, take care of our own affairs! Our rulers have no objection to people generally confiding in our judgment, so far as confidence in us will not injure our rulers' practice: they declare us, on payment to them as our teachers and licensers, to be competent to take the charge of people's comforts, and healths, and lives: but they utterly deny to us any ability in the management of our own affairs, or in the selection of the men of worth and talent when we would wish to administer matters for us. While we are thus recommended as medical attendants to the public with one voice, a second voice warns the public against our employment,—for how shall people trust characters whose recommenders will not trust them?

Here, we have genuine debased and debasing vulgarity—a vulgarity which has no more essential tendency than to generate and perpetuate itself. It is a vulgarity as attractive as it is frightful in mein, and has its imitators as well as its victims. It is the indulgence of the most sordid selfishness under a mock surface of respect to gentility. Now, the elective power we seek has the directly contrary tendency. It contains a plenary acknowledgment of each member's mental claims to notice and respect. It raises his self-respect, wins him that of those around him, and, thus, doubly tends to raise his moral standing in society. It exercises thought. The characters of his scientific brethren are before him in judgment: he sifts—he analyses—he appreciates. His discriminative faculties are improved—his imitative powers urged into worthy action. Above all, the great principle that WORTH is the donor of distinction, is established. Who will limit the advantages to science and humanity, of such a principle, so recognized? We certainly will not.

THE SPLEEN AND PLACENTA.

To the Editor of the "Medical Times."

SIR,—In the present number of Forbes's Quarterly Review is an article which I understand MR. PAGET prides himself in having perpetrated; and which article consists of certain strictures upon, and arguments against, my views concerning the spleen and placenta. The essay or inquiry in which those views were first advanced was published twelve months since; and what can have induced Mr. Paget—who is the reputed editor both of the Medical Gazette and Forbes's Review, after letting my essay pass without a syllable of notice from his pen for *a year*, now to assail it in the rancorous and virulent spirit which that article evinces, I am at a loss to divine;—unless indeed it be that some paltry feeling of jealousy has been stirred up in him by the increasing attention, which my opinions concerning the spleen and placenta, the *permanent* and *temporary* spleens, are now beginning to excite.

Now, although I think I have some reason to complain, first of the delay, and secondly of the style of the attack, for attack it is—I can, nevertheless, assure you, Sir, that I am right glad Mr. Paget *has* made it; and because it gives me the opportunity to reply. I am not one to shrink from fair and open discussion. I court it, and provided you will allow my replies to my opponents to occupy an occasional niche in the pages of your, I hope, *impartial* Journal, I respectfully invite Mr. Paget, and all others of his school, or way of thinking, to make their objections as fast as they are able.

Mr. Paget in his review endeavours to make his readers believe, though I feel assured he does not believe it himself, that he has succeeded in destroying the very foundation upon which my opinions concerning the spleen and placenta are based. He asserts that I have adduced no *proof* that the left ventricle is incapable of propelling the portal blood through the liver; and he also asserts that he has proved by means of the *hæmadynanometer* that it (the left ventricle) actually is capable of effecting that propulsion! Here are Mr. Paget's own words:—"It will probably content our readers if we let them know the style and value of the work, by examining each of the grounds on which this new account of the office of the spleen is founded. It is said, 'the vis à tergo of the heart's action is not adequate to propel the blood through two venous and two capillary systems, and an additional power is necessarily required to propel it through the liver.' Now no proof of this is adduced, but it *has* been proved that, after death, a syringe worked with no greater force than the hœmadynanometer indicates as the force of the left ventricle, *is* capable of propelling fluid through the liver, and that without the sucking influence of inspiration. The general and fundamental assertion is therefore at once and in general disproved." Now it must be evident to all that the *whole* force of the left ventricle is not expended upon the blood which is sent through the cæliac and mesenteric arteries, but only a certain proportionate amount of that force. But even if the whole force of the left ventricle were so expended, it could not propel the portal blood through the liver. Nay, supposing that force were ten or a hundred times greater than it is, an additional power would still be required, for the left ventricle even then could propel no more blood through the liver than it propelled through the cæliac and mesenteric arteries. *But more blood enters the heart by the hepatic veins than is sent through those arteries.* How then can the left ventricle propel it through the liver?

Mr. Paget well knows that fluids, occasionally to the amount of several gallons in the course of a day, pass from the stomach and duodenum, not through the absorbents and thoracic duct into the left subclavian vein, but through the gastric and duodenal veins into the *splenic*: and he cannot help seeing that it *therefore* follows that *much* more blood enters the heart by the hepatic veins than is sent through the cæliac and mesenteric arteries. This fact was stated more than once in my Essay, and at p. 35 in *italics*, as one of the chief grounds on which my view of the spleen's use was based; and yet Mr. Paget coolly asserts that I have adduced *no proof* that the left ventricle is incapable of propelling the portal blood through the liver! Now, what, I ask, is the foregoing fact but a proof? If it alone, without the help of other arguments, does not prove, and clearly and convincingly too, that the left ventricle cannot propel the blood through the liver,—then there is no such thing as proof. Does it not say, as plainly as facts and figures can, that for the left ventricle to propel the portal blood through the liver, it would be necessary for it to be able by propelling a certain quantity, say one ounce, of blood through the cæliac and mesenteric arteries, to drive a *greater* quantity, say ten drachms, through the portal trunk, portal plexuses, and hepatic veins? Now, what is this but a physical impossibility? What but an absurdity as monstrous as that four are equal to five, or that a power can overcome a resistance greater than itself? Mr. Paget, at the time he made his assertion could not possibly be ignorant of the fact in question; but, let it be noted, that fact in his review he has not so much as mentioned! Now, if with a knowledge of that fact, Mr. Paget could not see that the left ventricle is incapable of propelling the portal blood through the portal trunk, branches, plexuses, and hepatic veins into the right auricle, what sort of an estimate, sir, are we to form of his judgment? If, on the other hand, he did see that it was incapable, what are we to think of his honesty and impartiality as a reviewer, when he at one and the same time conceals the proof, and unblushingly asserts that I have adduced none?

Another fact which I have pointed out, equally strongly corroborative of my views with the preceding, Mr. Paget's discretion has led him also to conceal, viz. the much larger relative size of the spleen to the liver in men than in quadrupeds. I need not here state why there is this great and striking difference, as my explanation of it is well known to most of your readers. But Mr. Paget denies that in quadrupeds the direction of the vessels from the portal trunk through the liver is horizontal; nay, he even states, that the ascent which the portal blood has to surmount to get through the liver into the heart, is comparatively greater in quadrupeds than in men. Had he have said that men walk on all-fours, and quadrupeds only on their hind-legs, the untruth would hardly be more glaring and bare-faced, and, I imagine, would have met with just as many believers.

It must, I think, from the few preceding remarks, be pretty evident that Mr. Paget's opposition to my views is not entirely founded on his rational convictions; and when your readers are informed that several months ago Mr. Paget was himself engaged in physiological researches upon the spleen, which have not yet been made public, and as I venture to predict never will, they will probably be enabled to form their own opinions as to the sort of feelings and motives by which he has been influenced.

I have by no means done with Mr. Paget. Other engagements, however, compel me to defer until another week any further remarks upon his criticisms. I purpose, then, to do myself the pleasure of contributing to his edification and your amusement, by contrasting his style when reviewing the works of others, to that which he uses when he reviews his own. In the meantime, I beg to subscribe myself,

Sir, your obedient servant,

JOHN JACKSON.

6, Stonefield St., Islington, April 17, 1843.

PENCILLINGS OF LIVING MEDICAL MEN.

JOS. CONSTANTINE CARPUE, Esq., F.R.S.

WE turn with reverential homage to this good and gifted man. We willingly acknowledge an inability to delineate the character of the subject of our sketch. After trying to give an outline of the insignificance of the small men whom nepotism and interest have raised to stations which they are unable to fill, it is a relief to contemplate the career of this gentleman who has been for so many years a glory, honour and ornament to our profession. He is the last of the great men who flourished as his contemporaries. He was the friend the companion of those "demigods of fame," Fox, Sheridan, Pitt, Parr, Holland, Lansdowne, Davy, Cooper, Whitbread, Tierney, Grant, Canning, Nelson, Lord St. Vincent, Francis, Horne Tooke, Romilly, Dundas, and last not least, Major Cartwright, and in his own profes-

sion Cruikshanks, Pearson, Heaviside, Hunter, Cline, Brookes,—not one of whom, including Pott, were ever elected examiners of the College of Surgeons. These men were the life of all society, the lights of literature and science. By all and every one of this galaxy of intellectual glory, Carpue was highly respected, and his talents, honesty, purity of intention and unswerving rectitude appreciated and admired. He is, now, the only link that connects us with the past with the eminent men of the last century. He is the Nestor of surgery.

> Experienced Nestor in persuasion skilled,
> Words sweet as honey, from his lips distilled,
> When he speaks what elocution flows,
> Soft as the fleeces of descending snows.
> The copious accents fall in easy art,
> Melting they fall and sink into the heart.

Mr. Carpue has, in his time, delivered 100 courses of lectures on anatomy and surgery. He was, for many years, surgeon to the military hospital, at Chelsea, which has been removed to Chatham. He served as assistant-surgeon to Keate who was then surgeon general, and, as he says, very properly so, as he was the best surgeon of his day.

Mr. Carpue investigated the causes of the ravages of the venereal disease among the soldiers, and having ascertained that the remedy, mercury, was as bad as the disease, he reduced the doses, and commenced that discriminating plan of treatment which prevails at the present day. To use his own words, we have, now, no heads perforated like sieves as formerly.

He first introduced diagrams in demonstrations which led the ignorant and unreflecting to sneer at him, and call him the chalk professor. Cuvier afterwards adopted the plan in the Jardin des Plantes. A knowledge of human anatomy was then very properly considered a necessary accomplishment to a gentleman and indispensable to the lawyer. Many of the aristocracy, leading men in both Houses of Parliament, were his pupils. At one season he had thirty barristers and numbers of law students on his books. He had the honour of delivering a course of lectures at Carlton House, and the Prince of Wales became quite partial to the science of anatomy and surgery.

Carpue resided in the palace several months, in attendance upon the Princess Amelia, for an attack of inflammation of the synovial membrane of the knee joint, when the Queen requested that he would treat her as his own sister. He read every day with the ladies popular works on Physiology: he occasionally refers with the warmest gratitude to their considerate kindness and courteous condescension, and describes them as "noble, beautiful, and good-hearted women." As Prince Regent and Monarch, George continued his fondness for the study, and sent on several occasions for Carpue to dissect with him particular parts of the human frame.

When the Duke of Portland died from the operation of lithotomy by Sir Everard Home, the Prince, hearing that the surgeons were poking so long in the bladder for the stone, was greatly shocked, and declared that his hair stood on end, and asked at once why they did not operate above the pubis; this was some time before the operation was revived here or in France. On a subsequent meeting, he declared to Carpue, that if he were not a prince he would have been a surgeon; to whom he replied with sincerity, that he would make a "devilish good one."

At this time Mr. Carpue's practice was very extensive, including all classes, from the inmates of St. James's to the denizen of St. Giles's.

His published works are "Electricity and Galvanism, as applicable to Medicine." In 1801, a Description of the Muscles of the Human Body, as they appear on Dissection, with prints and maps shewing their insertion; this very practical and useful work prepared the way for the improvements of the present day. His next work was the History of the High Operation for the Stone by Incision above the Pubis, with Observations on the Advantages attending it, and an Account of the Various Methods of Lithotomy from the earliest period to the present time; this was brought out in 1819, and dedicated to the Prince. He states that in 1556 Pierre Franco performed first since the time of Celsus the lateral operation. He laid it down as a law, that you must cut through the neck of the bladder; but there is not any occasion to make a large opening, if you can extract the stone by a small opening: it is better to enlarge the wound than to tear the bladder in extracting a large calculus. He also opened the bladder above the pubis, but protested against it. The position of the patient, the instruments, the incisions, and treatment were the same as the present day; he even invented an instrument to break the stone. He was, as a matter of course, opposed by the ignorant and the self opinionated. He then gives a detailed account of Frere Jaques' method of operating, of Raws', and of others. Mr. Cheselden, encouraged by the success of the last operator, (Raws) abandoned the high operation, In 1740, Mr. Serjeant Hawkins improved his gorget, by making it cut on one side; in five years, out of seventy-one operated by the grand appareil, thirty-two died. In 1748 Frere Come invented the lithotome cachée.

In 1816 appeared his work entitled, "Historical and Physiological Remarks on the Nasal Operation, including Descriptions of the Indian and Taliacotian, or Italian Methods, with engravings by Turner." The Italian was first performed by Branca, a Sicilian surgeon, in 1442. Taliacotius earned great fame by it in 1546. He improved the original operation.

The Indian operation is thus performed. In 1792 Tippoo Saib cut off an Indian's nose and ears; a bullock-driver in the Company's service, a Hindoo surgeon, made a new one in the following manner:—a thin plate of wax is fitted to the stump of the nose, so as to make a nose of good appearance; it is then flattened and laid on the forehead. A line is drawn round the wax, which is then of no further use, and the operator then dissects off as much skin as it covered, leaving undivided a small slip between the eyes; this slip preserves the connection or circulation till an union has taken place between the new and old parts. The cicatrix of the stump of the nose is next pared off, and immediately behind the raw part an incision is made through the skin, which passes round each alæ or wings and goes along the upper lip. The skin is now brought down from the forehead, and being twisted half round, its edge is inserted with incision, so that a nose is formed with a double hold above, and with its alæ and septum below fixed in the incision. The patient is made to lie on his back for five or six days. This operation is always successful.

Lucus, Chopart, and Lynn, performed it with success. It is more successful in warm climates owing to greater activity of circulation in the extremities. Branca learned it in Calabria where it had been introduced from Asia the parent of the arts and sciences. Galen alludes to the restoration of the nose, and Celsus without specifying it speaks of the restoration of lost parts.

The article "on adhesive inflammation" is well worth consulting now. He gives two interesting cases of operation on officers in his Majesty's service. The Italian only applies when the substituted part is taken from the arm or other part of the body, even that to which Butler so humorously refers in his Hudibras.

In all his cases adhesion took place on the third day, and the nose was of the same colour as the face. On the 12th the nose was œdematous. The first officer lost his nose from excess of mercury. The operation lasted a quarter of an hour. There was slight œdema, but in four months it had acquired solidity and shape.

The next was Lieutenant Latham of the third foot, who, seeing one of the colours of his regiment in danger of being taken from the ensign, who carried it, by four or five Polish Lancers, at the Battle of Albuera sprung to the spot, and in attempting to save it lost an arm by a sabre cut; still persevering with the other hand he tore the colour from the staff and wrapped it round his body, but not before he received five wounds, one of which took off part of his nose and cheek.

He was placed under Carpue by the desire of the Prince of Wales. The Indian plan was also performed in this case with complete success.

Carpue was born at Hammersmith, and is of Spanish descent. He was educated under Dr. Marshall, and afterwards completed it at Douay College, his parents being Roman Catholics. He subsequently visited all the seats of learning and science on the Continent. On his return he became pupil, and dresser to Sir Everard Home who then had a practice of 8000 a year. On his completing his term, Sir Everard offered him 500 a year to continue as his assistant and clinical clerk. He yet protests with indignation against the injustice of the estimate which the majority of medical men form of the baronet's abilities. Whilst he is willing to admit that the destruction of John Hunter's papers if intentional, and for selfish purposes, was not only censurable but criminal, he is inclined to think that Hunter's notes were not so voluminous nor so valuable as people suppose. A man, he contends, who dissects with intense application, is impatient of writing, he makes his mark at the moment, he makes use of hieroglyphics, which, after the dissection and the train of thought which it produced are past, become unintelligible, and urges that no person who has been much employed in absorbing pursuits and abstract speculations, but will admit that he has discovered how much time and attention have been wasted in notes, which, by the lapse of a few weeks, and a change of circumstances become totally unsusceptible of correct *interpretation.* Be this as it may, and making every allowance for the partiality of a warm-hearted and grateful pupil towards his friend and tutor, we contend that if there were but one grain of wheat in the bushel of chaff which genius had collected one diamond in the heap accumulated by its labours, although Sir Everard Home might be acquitted before the bar of the Bailey, assuredly he should be adjudged guilty, by the scientific world of a great crime and should go down to posterity with the burning and ineffaceable brand, infamy, upon his name and fame for ever and ever.

That he was a clever man we believe, and that in the language of one of his associates he was a damned proud man, a great drunkard, and a *great thinker* are *equally true and undeniable.*

The principles of medical reform which Carpue advocated with so much consistency and ability for so many years, and for which he suffered exclusion from office, honour and emolument, he succinctly and eloquently enun-

ciated in his examination before Mr. Warburton's Committee of the House of Commons. He laid bare the abuses of the present system, and he did justice to the memory of the great and good men whom their irresponsible few of the council by disingenuous, discreditable and unjust manœuvres rejected. He lucidly demonstrated the evils which their selfishness, short-sightedness and ignorance inflicted upon the great body of the profession and on the public, and proved by irrefragible reasoning that the representative principle, public examination, election to public appointments by competition, and a wise comprehensive plan of preliminary education not entrusted to men who had already manifested their unfitness to carry it out were the only means of satisfying and regenerating the profession, and providing the public with efficient and skilful medical officers.

We would be taking a narrow view of the character of this disinterested reformer if we were to measure his usefulness by his professional labours.

His great aspiration as a medical reformer, to which all his efforts tended, was to incorporate medicine and surgery that are in their nature and object inseparable. To diffuse harmony—to spread zeal—to disseminate and nurture emulation, honour and ambition among all its members, thereby to advance the progress of science, to augment the respectability of the profession and to increase the happiness and safety of the people. As a general reformer he struggled with leading and active men of the day, those bright and burning spirits who would not yield dominion of their minds to the tyrannical ministry of the day, and who, animated with the ethereal love of freedom, upraised and rallied round the people s standard, and placed it on the citadel of constitutional liberty, and battled for the recognition of those laws, the rich legacy of whose blessings the people of this country alone enjoy.

Some of those master minds who could flash around their arguments the collected lightning and wisdom, and illustrations of time gone by, forgot that the soil was unfit for the seed which they were sowing, and who would fain convert their own philosophical abstractions into popular realities, lived to find out the fallacy of their premature and Utopian projects. Others, who with the best intentions, were anxious to become the pioneers of their species became martyrs to their own restless desire to be beneficial to their follow creatures. Some who would reach these ends by means more sanguinary and ruthless than the tyranny which they denounced, he lived to see punished for their madness. With such men he never held alliance. His politics was philosophy reduced to practice. His levers were peace, law, and order. He was tolerant of the opinions of others, and always calmly argued and enquired if some improvement was not necessary in the condition of the country, and if the health of the political frame was so sound as not to require some change, and always endeavoured by a calm appeal to the just feelings and to the unbiassed reason of his opponents to disabuse them of their impressions, to open the avenues of concord, to soften asperities, to avoid violence, and by an amnesty of mutual injuries, and by timely concession to unite all in a great national, fraternal, and social organization. With this view he endeavoured to increase the constitutional power of the people, to preserve the freedom of the press, and to communicate a useful and practical education to the masses, so that they might know their rights, their strength, and their necessary obligations. For this he conscientiously believed every honest man should exert himself. That wars should cease, that international prejudices be obliterated, that no man should cease to toil until the glorious, the golden era had arrived

> When rival nations join their hands,
> When plenty crowns the happy lands,
> When knowledge gives new blessings birth,
> And freedom reigns o'er all the earth.

This was his object. His politics never lost him the esteem of his opponents. The most bitter respected the sincerity and purity of his intentions. The patronage, the friendship of royalty itself, the consideration and attention of the noble in rank, their earnest solicitation to segregate him from his party, could never wean, although aware of the sacrifice he was making from the public but never offensive avowal of his principles. He had all the sternness of the republican, without his acrimony, all the ardour of the reformer without his impetuosity.

Even, now, when nearly four score years and ten, the old man is firm as granite. His hairs are silvery and white, but his heart and his principles are green.

You cannot look at his finely formed, beautiful arched, and nobly architectured forehead, his purely Athenian face, without being attached to him by the silver chord of sympathy, such a pleasing playfulness, such good nature in all he looks and utters. Even, now, oppressed with years, and not exempt from the infirmities attendant upon a great age, he is still unimpaired in talent and unshaken in spirit. He is very thin, but upright as a dart, and his sharp intelligent eye glows with its wonted fire when warmed with his subject. His thin compressed lips express firmness, mixed with raillery and humour. His high and towering forehead is like Brunel's, divided by a dike or indentation between the perceptive and reflective organs, which are strongly and nobly marked. He was by far the most pleasing and popular lecturer of the day. He possessed all the qualities to make success certain. His strong but musical voice—his action dignified, animated, appropriate—his statements lucid and ornamented with the chastest beauties of classical literature and illustration. His perception rapid in the pursuit of whatever embellished and established his reasoning. He was also familiarly intimate with the lore of ancient and modern British poets a treasure much neglected at the present day. He could thus make his discourse quaint and recondite striking and impassioned, florid or argumentative, imagination and judgment were so nicely equipoised in him, that he was sure to delight his audience, of whatever class they might be, whether operative or aristocrat. He had the rare art of pleasing everybody: we may truly say, he possessed what Cicero said of his friend Crassus,

> Latine loquendi accurate et sine molestia diligens elegantia.

Even, now, when sitting at the feet of the venerable Gamaliel, we must quote from the same author to express the pleasure we derived from the molten words of wisdom that flowed from his lips,—

> Plena litteratæ senectutis oratio. Quanta serenitas in vultu Quantum pondus in verbis!

Carpue is like all great and good men, simple, natural, amiable, full of humane feeling, and kindly affections. Brookes, to whose memory he does justice—his great rival—who opened his course in opposition to him at 10 guineas, half the price which Carpue charged, —when it was rumoured that the college men were making a party to reject him when nominated as a Fellow of the Royal Society, Carpue hastened down, proposed, and carried his election—an act of liberality and magnanimity which these sordid wretches could not comprehend. Cuvier dining with Brookes in the presence of several savans, warmly declared "your museum is the finest collection I ever saw. The man who made it deserves the admiration, not only of his own countrymen, but of the world." Yet the self-elected, envious of his fame, and hating his genius that by its contrast would expose their littleness, would not admit in the Council him who could teach them both human and comparative anatomy.

Brookes died of want—without money in his pocket, but full of pawnbrokers' tickets. Had they the honesty or justice to make him an examiner, remarked Sir Astley Cooper and Carpue, he would be alive now!!!

Carpue himself furnishes evidence against the Council. He is a memorial of the past and present neglect of merit. His life, at least, was above reproach—his character above suspicion. He won his way to the people's and monarch's confidence by his talents and acquirements. He taught and made more surgeons than any man living. If elected, not a man would dare deny he deserved it. As Sir Astley Cooper observed, "Carpue, by this time, you ought to be twice president of the college." The reason why he did not succeed at once, suggests itself—his spirit disclaimed dishonor. He hated sycophancy, and would not stoop to it: he would not sacrifice justice to expediency: he recoiled from intrigue with the antipathy natural to a noble mind.

Like Lawrence, or the ancient Helot, he could not sell gold for brass—glory for abasement The Roman of yesterday could not be the Carian of to-day. All low, devious, dishonorable and subterranean passages and practices he disdained. As has been said of another great man, in a similar situation,—the gates of promotion closed upon him as those of glory opened. As Clarendon said of another celebrated man,—his reputation for honesty was universal, and his affections so publicly guided, no private or selfish ends could bias them. His pupils are diffused all over the world; his name cherished, and revered, coextensively. If defects are required in a sketch like the shading of a picture to throw out in relief the points and characters of the portrait, this must be admitted to be imperfect. His useful life has won the esteem of the public, the love of a large circle of friends, and what is a richer reward to them than any office they could bestow—the gratitude of the profession, past, present, and to come.

PROBE.

POOR-LAW MEDICAL REMUNERATION.

Nothing can justify the existing mode of treating either the medical profession or the poor. The plan of the Poor-Law Commissioners is to drive medical men into accepting a mere nominal remuneration for their attendance and the medicines which they supply; and they effect this by the threat that if the established practitioners in any union insist on receiving an actual remuneration for their services, they, *the commissioners*, will start a rival who shall "undersell them." Of all the professions in this country, there is none which has so little an approach to monopoly as the medical. Whenever an old practitioner dies, or retires, there are always plenty of competitors to supply his place: and as long as there is a distant prospect of any one of them being able to establish himself in practice, they struggle on, subsisting principally on hope. It is only when hope deferred has made the heart sick that the unsuccessful leave the field. The Commissioners' threat is consequently a very formidable one; and the poor country apothecary, barely able as things are to maintain himself and his family, is driven by sheer compulsion to accept whatever terms are offered to him, exclaiming, by way of apology for submitting to injustice against which he has no power to defend himself—"My poverty and not

my will consents." He takes on himself, under the hard pressure of the commissioners and the guardians, the medical care of the parish poor. He knows that the salary appropriated for him is totally inadequate to pay a tithe of the mere drugs which he must supply to his pauper patients. He feels that they are *forced* on him as a choice of evils; that he will not be paid anything approaching the cost price of these drugs, and that the whole of his advice, attendance, and care is to be bestowed without a semblance of remuneration. He is like a man stopped on the highway, who gives up his silver to save his gold, or his silver and gold to save his life. He is compelled to submit to sheer spoliation, and the only question is as to the amount of which he shall be robbed. The choice is made to exclude a rival; and the rate-payers have the satisfaction of knowing that they have saved their own pockets at the expense of an individual whom circumstances have unhappily thrown in their power. What is he to do. If he is thoroughly conscientious, he gives gratuitously to the poor those attentions and medicines for which in mere honesty he ought to be well paid. But if he is not particularly scrupulous, he has two courses to pursue. The obvious one for a man who is not particularly punctilious, is to give to the poor the smallest possible portion of his time, care, and property which the terms of his engagement with the parish will permit. How small this portion may be, we will leave to our reader's judgments, who will bear in mind that the medical man has always a most ready reply to any complaints which the guardians may make :—" Gentlemen, I have given " to every case, for which you pay me less than " one penny, drugs to the value of twopence, and " my attendance gratis," His other alternative is the honest one suggested by Archdeacon Samuel Wilberforce. Make "the wealthier "patients" pay for the poorer! Do as the tailors are said to do, —send in to your "wealtheir patients" six draughts instead of four, to make up for the one you send to and the care you bestow upon a neighbouring pauper! Cheat those *you* can to balance the accounts between yo urself and those who cheat you because *they* can ? Do unto others as we do unto you, and *thus* comply with " the law" of Christian charity ?"—*The Times*.

REVIEWS.

The British Quarterly Journal of Dental Surgery. Churchill.

We are glad to hail the appearance of a journal dedicated solely to Dental Surgery. If it can force a circulation it cannot but do good, and whatever knowledge it diffuses cannot but be of essential service to the parties it is intended for. The head quarters of quackery and imposture have long been firmly fixed in Dental Surgery, where more swindling in connection with more physical pain has been exhibited than in any other department of human business A respectable journal like the one under notice must as one essential part of its success do much in crushing this truly formidable hydra, and principally in that expectation we warmly hail the good work commenced by Mr. Robinson.

The articles in the present number are of general interest, and appear to us well selected. The case of irregularity of the incisors in an adult, by the Editor, is valuable and well illustrated. In the next article on "the necessity of a Faculty of Surgeon Dentists" we have appended the following anecdote as illustrative of the low position occupied by dentists in the social scale.

THE LOW STATE OF THE DENTAL CORPS.

" Some years since, a talented gentleman of our profession, travelled in a railway carriage, from ——— to London, with an aristocratic member, for an influential town in Lancashire, and they were mutually interested. Before parting, they had become so very friendly, that the M. P. took out his card, presented it, saying. " I shall be very happy to renew our very pleasant, but accidental acquaintance. " Of course the man of forceps gave one in return, apologizing that he had only a professional card. When the M. P. saw the words " Surgeon Dentist, " on the neat " glazed patent," he seemed surprised, and shocked,—to use the language of our informant—his nether lip dropped, and in a confused and awkward manner he bowed, and hurried away. In this instance the dentist was respectable in character,—high in professional reputation, and a gentleman in his education and manners. How then can we account for the sudden metamorphosis,—for a change so striking and instantaneous—one minute regarding his accidental acquaintance as an " angel of light, " but in the next, so soon as the ominous title was seen, a film seems to fall from off his eyes, and all the brightness vanished!

The following cullings from the number will not be without their interest.

DENTAL KNOWLEDGE OF ANCIENT EGYPT.

There are other reasons why we deem that the teeth both in disease and in health were the subject of investigation by the ancient Egyptians. Thus we find that their value as ornaments to the human countenance was fully acknowledged in the promulgation of that law which made the extirpation of a front tooth one of the most severe punishments that could be inflicted. To this custom, too, very likely may be traced the original substitution of artificial teeth for natural ones. As the absence of a front tooth, whether owing to disease or accident, or well-merited punishment, would ever be regarded with suspicion, we may naturally suppose that the invention would be taxed to supply the *hiatus*. The felon would seek for concealment, or the means of mixing again with society without the brand of disgrace upon him ; and the honest but unfortunate individual, the number of whose teeth disease or accident, had diminished, would strain every nerve to avoid being mistaken for the guilty outcast. Thus among the relics of the ancient dead—amid the sarcophagi of Egypt—have been found, by Belzoni and others, *artificial teeth*. 'Tis true that these were not intended for mastication, being frequently made of wood, yet to an observing people their employment must have demonstrated their important assistance in enunciation, and the permanency of the neighbouring teeth in consequence of their artificial support.

MR. NASMYTH'S RESEARCHES.

The subject matter submitted to a committee of the Academy of Sciences, Paris, composed of Messrs. Detrochet, Fleuras, and Serres, consists of thirty preparations extended on plates of glass for microscopic examination ; together with a manuscript memoir of twenty-five pages, accompanied by a plate of diagrams. Nasmyth advances that the cellular structure of the teeth is their fundamental character, and admits this disposition both in the enamel and bony part. The solution of this question is so interesting in a physiological point of view, that your committee have not only examined with care the preparations submitted to them, but have also made some themselves, to be satisfied that neither artificial production nor microscopic illusion have had any share in obtaining the results. With the same view, we have had two plates of drawings executed, which we submit to the Academy. 1st. Does the dental tissue examined by the microscope offer a cellular disposition ? To establish this delicate point Nasmyth refers us to preparations 1, 2, 3, 4. In these we distinguish among the component fibres of the bone, numerous areolæ or compartments with distinct sides, having a disposition similar to what we name cellular in other organizations. Their arrangement appearing different in each preparation proves that there is nothing illusory in their manifestations. We have not, however, been able to make out the configuration of these cells in a manner so marked, as they appear in the drawings 1, 2, of the memoir, and which have served the author as a type in comparing this disposition with other cellular tissues. What forms the capital point of Nasmyth's work, the verification of which has chiefly occupied the attention of your committee, on account of its importance in itself, and because it is opposed to the observations of the latest inquirers, his discovery of the cellular disposition in interfibrous tissue of the bone, supposed to be structureless by the latest skilful anatomists, and adopted as such by Retzius and Muller. Nasmyth next investigates the nature even of the fibres themselves ; viz : Are they hollow or solid ? this question so long agitated is not yet definitely resolved. Preparations 9 and 10 represent perfectly the areolar structure of the enamel. He next passes to the study of the dental pulps, and succeeds in establishing a connection between the structure of these, and that of the bone and enamel. The preparations 11, 12, 13, 14, and 15, as well as diagrams 7, 8, and 9, all manifest the areolar disposition, the cells in some of these assuming the character which Nasmyth terms vesicular. We have not only reproduced with success the preparations which show the cellularity of the pulp, but by suffering them to dry on the object glass of the microscope, we have seen the fresh granulations noticed by R. Owen, which give to the pulp the appearance of orange peel, sink gradually by the evaporation of the moisture, and transform themselves into cells, This serves to show the difference between the conversion of the dental pulps, and cartilagenous ossification. His injection of dental bulbs is the richest we have ever seen. In them we distinguish perfectly the direct communication between the veins and arteries, and further remark that these vessels divide and subdivide themselves in the depth of the pulp until they attain an almost inexpressible tenuity. It remained for Nasmyth, in order to complete his work, to reproduce artificially the bony tissue of the tooth by the action of acids. In this likewise he has succeeded as shown in preparation 17 and 18, the first made on the ivory of the elephant, and the second on the human tooth. With respect to what the author says concerning an investing and persistent membrane of the enamel, little satisfied with the results of our own experiments, we begged him to repeat them before us, but his engagements not allowing him time to do so, we have transcribed his description for the benefit of science. This important discovery is already sanctioned in part by the researches of M. Fleurens on the persistence of the dental capsule in the teeth of the cow and the horse, and on the other hand, by those of your committee who have observed in the enamel membrane, the cellular structure represented in drawing No. 9. May not these cells be the little vesicular sacs, in which Retzius supposes the elementary molecules of the enamel to be contained ?

In conclusion we must state that a more perfect collection of preparations has never been presented to your committee. The profound study we have made of them, in comparing them with the designs published from the time of Malpighi and Leeuwenhoek, up to Reizius and Owen, enables us to say that they contain the microscopic history of the dental system of Mammalia nearly complete. They show the dental fibres or tubes in every point of view ; united in bundles, or scattered ; sometimes continuous and diverging from the cavity of the tooth towards the periphery ; sometimes fractured in their passage. The fibres, composing the enamel, are also reproduced with remarkable neatness. We see them placed perpendicularly on the tubes of ivory, forming together that kind of vault for their protection noticed first by Hunter, Blake, and others. These fibres diminish gradually from the periphery of the crown to the origin of the fang, where they merge insensibly in the cortical substance discovered by Tenon. These facts, interesting to the anatomist, are still more so in a physiological point of view, replacing, as they must, the hypothesis of the external secretion of the bone, by the more natural theory of the transformation of the pulp.

Askern and its Mineral Springs. By E. Lankester, M.D., F.L.S., &c.

This is a little book of a comprehensive character. It is at once a genteel medical puff of Askern and its Mineral Springs, and a guide book for both the time-killing and scientific visitor to that neighbourhood.

We learn from it that there are five wells, the ingredients in which only differ in small particulars in their proportions. The following are the analyses of two of them furnished by the joint labours of Dr. Lankester and Mr. West of Leeds.

	Manor Well.	Charity Well.
Sulphate of Magnesia	34 grains.	18 grains.
Chloride of Calcium	3 do.	4 do.
Sulphate of Lime	110 do.	104 do.
Carbonate of Lime	6 do.	12 do.
Carbonate of Soda	26 do.	26 do.
	179	164

We have, here, nothing which presents the Wells of Askern to us as of any peculiar, much less extraordinary, medicinal efficacy. Except in their effect on general health, common to all spas which offer the salubrity of a rural residence, change of air, scenery, and habits, we should be disposed to expect no specific virtue from the Askern Waters except in the lighter forms of cutaneous diseases. Dr. Lankester, however, though he seems guardful of exaggerating their powers, expresses a favourable opinion of their agency in gout, rheumatism, paralysis. The book is neatly written, and if not marked by any erudition of literature, or brilliancy of original thought or expression—qualities, indeed, which would have been above his subject—is not without the merit conferred by a general knowledge of the resources of present science and an easy gentlemanly mode of conveying it. There is, however, among other exceptions, a short translation to which we must give a more qualified eulogium. We think the poet's sense and delicacy have both been lost in the English version. On a dome enclosing a well supposed to have been once frequented by Robin Hood, "one of the Gales" (which of them ?) wrote this inscription.

Nympha fui quondam, latronibus hospita sylvæ,
Heu nimium sociis nota, Robine, tuis,
Me pudet innocuos latices fudisse scelestis,
Jamque viatori pocula tuta fero.
En pietatis honos! Comes hanc mihi Carliolensis
Ædem sacravit, qua bibis, hospes aquas.

The following is our author's translation:—

Here once a nymph, as friendly to the robber-band I stood,
Alas too closely known, to thy companions Robin Hood,
It shames me much, that my pure streams to wicked men were poured,
But now the cup of safety to the traveller I afford,
Behold the grateful tribute Carlisle's lord did raise,
The dome wherein thou drinkest, stranger, speaks his praise.

The doctor, when next he turns poet, will do well to rub up his auscultatory and orthopedic science. We are, ourselves, not poets, but, we think, we could perpetrate something more respectable in the way of versification if we were we hard put to it. Let us see

In former times I lived the outlaws friend,
A nymph, too known to Robin's lawless bands,
But taught my guilt, I shrunk their stained hands,
And, now, my purer smiles to pilgrims lend.
Oh ! joy of goodness ! Carlisle seeing, praised,
And this fair temple to my honour raised.

In page 10 we have another proof of carelessness which we should not have expected from the general character of the book. Speaking of the remains of an ancient camp, he observes, that although, now, "in the midst of a swamp, it is probable from its geological structure that it has *always* been quite dry," and forthwith we have an authority given to shew that it was a swamp ages ago.

Despite these little defacing exceptions, however, this little book possesses the merit of being perfectly equal to its subject—a merit of no mean kind when we consider the scientific progress recently made by topography.

INGREDIENTS OF STAMPED AND PATENT MEDICINES, RECIPES, &c.

(*According to Dr. Paris, and other Authorities.*)

Abernethy's Pills for Indigestion.—℞. Calomel 1 scruple, sulphuret of antimony 1 do., gum guaiacum 2 do.—Castile soap, to form twenty pills.

Elegant Method of making pure Acetic Acid. (From the German.)—Take a long glass case, and arrange shelves in it, a few inches apart, one above another, on which place small flat dishes of earthenware or wood; then fill these dishes with alcohol, and suspend over each dish, a portion of the black powder of platina; hang strips of porous paper in the case, with their bottom edges immersed in the spirit, to promote evaporation. Set the apparatus in a light place, at a temperature of from 68 to 86 deg. Fahr., for which purpose the sunshine will be found convenient. In a short time the formation of vinegar will commence, and the condensed acid vapours will be seen trickling down the sides of the glass, and collecting at the bottom. We shall find that during this process, produced by the mutual action of the platina and the vapour of alcohol, there will be an increase of temperature, which will continue till all the oxygen contained in the air inclosed in the case is consumed, when the acetification will stop, the case must be then opened for a short time, to admit of a fresh supply of air, before the operation will re-commence.—With a case of twelve cubic feet content, and with seven or eight ounces of platina powder, we can produce one pound and one-ninth of absolute acetic acid from one pound of absolute alcohol, and if we reckon the product at the commercial strength of vinegar, the increase will of course be very great.—From twenty-five pounds of platina powder, and 300 pounds of alcohol, we may produce daily, about 350 pounds of pure acid.—It is proper to state that the platina powder does not *waste* and that the most *inferior* spirit may be employed.

Acetic Æther.—℞. Acetate of lead 40 parts, alcohol 20 ditto, strong sulphuric acid 23 ditto.—Mix and distil into a large refrigerated receiver

Silent spirit flavoured with this æther, and the other articles usually employed, forms the most wholesome substitute for foreign brandy that can be made, and at the same time has much of its flavour.

Æthiop's Mineral.—℞. Quicksilver 1 part, sulphur 2 ditto.—Unite with heat.—Dose, twenty to sixty grains.—A much larger quantity of sulphur is used for a common article.

Alcohol.—Take the bladder of an ox or calf, soak it for some time in water, then inflate it and carefully free it from the attached fat and vessels; this must be done on both sides. After it is again inflated and dried, smear over the outer surface twice, and the inner surface four times, with a solution of isinglass. Then nearly fill it with the spirit to be concentrated, leaving only a small space vacant; it is then to be securely fastened, and suspended in a warm situation, at a temperature of about 122 deg. Fahr., over a sand bath, or in the neighbourhood of an oven or fire. In six to twelve hours if the heat be properly conducted, the spirit will be concentrated, and in a little time longer may be rendered nearly free from water, (anhydrous) or of the strength of ninety-seven or ninety-eight per cent.—This alcohol will be sufficiently pure for all the common purposes of manufacture, and affords an excellent mode of concentrating spirit for making varnishes, &c. &c.—The same bladder will serve more than one hundred times.

To ascertain the quantity of Alcohol in Wine, Beer, &c.—℞. Liquor to be tried 100 parts, solution of lead (as below), 12 do.—Agitate together, and filter, then add fused potash (powdered) as long as it is dissolved; the alcohol will then be seen floating on the top of the mixture in a well marked stratum; estimate the quantity by means of a graduated tube.—The solution of Subacetate of Lead.—℞. Litharge powdered 15 parts, acetate of lead 12 do, water 200 do.—Boil for twenty minutes, or until reduced to one-half.—Keep it in well-corked phials.

Almond Bloom.—℞. Brazil dust 3 ounces, Isinglass 2 do., cochineal 1 do., alum 4 do., borax 1 do., water 10 pints.—Boil until reduced to a gallon, and strain.

Almond Cake.—℞. Almonds, blanched and bruised, 1 lb., ten eggs well beaten, sugar 1 lb. flour ¾ do.—Mix

Almond Lozenges. Sweet.—℞. White sugar 3 lbs., starch 1 do., blanched almonds 2 do.—Beat into a thick paste, then roll it into a cake and cut it into lozenges.—A little essence of orange or lemon may be added.

The celebrated Honey Almond Paste.—℞. Honey 1 lb., white bitter paste 1 lb., oil of bitter almonds (expressed) 2 do., yolks of eggs 5 in no.—Heat the honey, strain, then add the bitter paste, knead well together, and lastly, add the eggs and oil in alternate portions.

Almond Soap.—℞. Oil almonds 7 lbs, soda 1¼ do., water, sufficient quantity.—The soda must be rendered caustic before adding it to the oil, and heat must then be applied.—An easy way of preparing the soda is to treat it in solution, with powdered quicklime.

Anatomical Preparations.—℞. Water saturated with sulphurous acid, to which add a little creosote.

Another.—Chloride of tin 2 parts, muriatic acid, 1 do., water 40 do.—Dissolve and filter.

Another.—℞. Bichloride of mercury 3 parts, muriatic acid 1 do., water 65 do.—Dissolve and filter.

Another.—Alcohol 2 lbs, water 2 do., ammonia 1 oz.—Mix and dissolve.

Armenian Cement.—The jewellers of Turkey, who are mostly Armenians, have a singular method of ornamenting watch-cases, &c. with diamonds and other precious stones, by simply glueing or cementing them on. The stone is set in silver or gold, and the lower part of the metal made flat, or to correspond with the part to which it is to be fixed; it is then warmed gently, and has the glue applied, which is so very strong, that the parts thus cemented never separate: this glue, which will strongly unite bits of glass, and even polished steel, and may of course be applied to a vast variety of useful purposes, is thus made: Dissolve five or six bits of gum mastich, each the size of a large pea, in as much spirits of wine as will suffice to render it liquid, and, in another vessel, dissolve as much isinglass, previously a little softened in water, (though none of the water must be used,) in French brandy or good rum, as will make a two ounce phial of very strong glue, adding two small bits of gum galbanum or ammoniacum, which must be rubbed or ground till they are dissolved. Then mix the whole with a sufficient heat. Keep the glue in a phial closely stopped, and when it is to be used, set the phial in boiling water.

Factitious Balm of Gilead.—℞. Benzoin 1lb. yellow rosin, 14 do.; melt and add, oil lemon 4 ozs, oil rosemary, do., oil caraway, do.; spirit to reduce it to a proper consistence.

Barclay's Antibilious Pills.—℞. Extract of colocynth, 2 drachms, extract of jalap, 1 do., almond soap 1½ do., guaiacum 3 do., tartarised antimony 8 grains, oil juniper 4 drops, oil cara-

way do., oil rosemary do.—Form into a mass with syrup of buckthorn, and divide into pills.

Bate's Anodyne Balsam.—℞. Laudanum, 1 part, opodeldoc 2 do.—Mix.

Bateman's (Dr.) Itch Ointment.—℞. Sulphur 2 ozs., powdered pearlash 1 do., lard 4 do.; melt, then stir in, rose water 1 do., vermilion 2 drachms, bergamotte 1 do.

Birdlime.—℞. The middle bark of the holly, any quantity; boil it for seven or eight hour in water, or until it is soft and tender, then drain the water off, and place it in pits under ground, surrounded with stones; let it remain to ferment, and water it if required until it passes into a mucilaginous state. Then pound it well and wash it in several waters, next leave it for four or five days to ferment and purify itself.

To render Boots Waterproof.—℞. Boiled oil 16 parts, turpentine (spt) 2 do., Bee's wax 1 do., resin 1 do., turpentine (Venice) 2 do.—Melt and use hot.

To make British Cognac Brandy.—℞. Clean spirit (17 up) 100 gals., high-flavoured cognac 10 do., oil of cassia 1½ oz., oil of bitter almonds (essential) ½ do., powdered catechu 10 do., cream of tartar (dissolved) 16 oz., Beaufoy's concentrated acetic acid 3 lbs., colouring (sugar) 1 qt. or more.—Put the whole into a fresh emptied brandy piece, and let them remain a week, together with occasional agitation then let them stand to settle.

Capillaire.—℞. Loaf sugar 1 cwt., water 12 gallons, white of 12 eggs.—Put them into a cold copper and dissolve, then apply heat and skim it until quite clear, filter, if necessary, and add orange-flower water, or essence of neroli, to flavour.—A spoonful or two added to water, gives it a very pleasant flavour.

Gaseous Chalybeate Water Powder.—℞. Bicarbonate of soda 98 parts, tartaric acid 116 do., sulphate of iron 3 do., sugar (white) 280 do.—Mix in the state of coarse powder, and keep it dry.—This is the quantity for one bottle (quart.)

Chambers's Remedy for Drunkenness.—℞. Tartar emetic 8 grains, rose water 4 ounces.—Mix; put a table-spoonful into the whole quantity of liquor drunk each day by the patient, and let him take it as usual.—Be careful not to exceed a table-spoonful or half an ounce.

Chelsea Pensioners Remedy for Gout and Rheumatism.—℞. Gum guaiacum 1 oz., rhubarb (powder), 2 drachms, flowers of sulphur, 2 ozs., cream of tartar 1 do., ginger powder 1 do.—Make them into an electuary with treacle.—Dose; two tea-spoonsful night and morning.

PERISCOPE OF THE WEEK.

Proximate Cause of Diabetes.—Dr. Watts, of Nottingham, looks upon diabetes mellitus as a result of derangment, solely, of what Dr. Prout terms primary assimilation, or, in other words, a result of mal-digestion, and endeavours to show that the whole of the symptoms, observable in the various stages of the disease, are referrible only to disease of the stomach, the primary organ of digestion; and to point out what is that derangement of this organ which becomes the proximate cause of diabetes mellitus. Digestion, he says, may be comprehended in, 1. The conversion of the feculent and gummy matters into a saccharine principle. 2. The conversion of the saccharine into an oleaginous principle. 3. The conversion of the oleaginous into the albuminous or fibrinous principles. 4. The vitalisation of the chyme. The means by which these changes are effected are partly of a chemical and partly of a vital character. The first three of these changes are produced by the aid of the animal heat, water and various secretions of an acid nature formed by the stomach itself. These acids are the free muriatic and acetic acids. There is another acid very frequently, and he thinks *constantly*, found in the stomach during digestion, whose existence, as forming a part of the normal gastric juices. is much disputed and by Liebig is altogether denied; *lactic acid*. Dr. Prout, speaking of it says, " Whether this lactic acid be essential to the digestive process in man, and in other animals in which it exists, does not appear to be clearly ascertained. My own opinion respecting it is, that though frequently present in the human stomach, it is rather to be considered as the result of unnatural irritation produced by disease, indigestible aliments, &c., than as a healthy product necessary to the digestive process." It is the acid *constantly* found in the stomach of the calf; it is the agent by which bones are acted upon in the stomach of carnivorous animals, and it is found to be present in the stomach of man, an omnivorous animal; it is admitted by Prout to be a secretion from the stomach itself and the lactates are always found in the blood and urine. From these circumstances, unless we assume that in no one instance is digestion properly performed, and that glands are provided to secrete a fluid only in disease, it must, he thinks, be conceded that lactic acid is one of the means by which the before mentioned changes in our food are effected. He conceives the proximate cause of diabetes to be threefold. Of the first stage it is an inflammatory condition of the mucous and glandular structure of the stomach; of the second, it is a state of atonic excitement, resulting from the activity of the former; and of the third it is nearly perfect atony of the nerves which bestow upon the stomach the capability of secretive action. The first stage of diabetes is not characterised by sugar in any of the fluids, and it may terminate without passing into the second; the second stage may continue for some time, and not proceed into the last; if the causes which induce the third and last stage be applied during the existence of the first stage in sufficient strength, the third stage is at once induced, to the exclusion of the second; and from the circumstances of the third stage passing into rapidly terminating phthisis, with cessation of all its symptoms the saccharine urine among the rest, the disease does not depend upon any structural lesion. The three stages, with their products, may be thus shown:—First stage, lactic acid, lithate of ammonia. Second stage, fat, sugar. Third stage, lactic acid, emaciation.

Tar-ointment.—Tar-ointment, says Dr. Turnbull, of Wolverhampton, is a remedy which I have found of great service in several cases of diseases of the skin, which have occurred in my own practice, and I have besides seen it used with success in the removal of psoriasis, lepra and chronic eczema, by M. Emery, at the Hôpital Saint Louis. He has also, I observe, lately employed, with satisfactory results, concrete naphthaline, a preparation obtained from tar, in the treatment of psoriasis. About four years ago a case came under my care of impetigo larvalis of the scalp, in a child four years of age, where I made use of tar-ointment with very good effect, after several other means had been tried without the slightest benefit. Every part of the scalp was covered with pustules, which secreted abundance of a viscid matter, of a disagreeable smell, and the lymphatic glands at the upper part of the neck were so much swelled in consequence of the irritation from the inflamed scalp, as to cause some difficulty in breathing. After employing antiphlogistic means, purgatives, and leeches behind the ears, also emollient applications, poultices, and unguentum zinci, without the least benefit, I ventured, not without some fear of increasing the inflammation to apply the tar-ointment considerably diluted. No irritation, however, followed, and in the course of two days the swelling of the lymphatic glands began to subside, the secretion of matter from the pustules diminished, and, within a week from the first application of the ointment. the eruption had almost entirely disappeared. Some time ago I made use of the tar-ointment in an obstinate case of prurigo, in a stout child, about three years of age. The eruption had been present from a short time after birth; it covered almost every part of the body, and had resisted every kind of treatment that had been tried. I first prescribed purgatives, with alkaline medicines, internally, and the tepid bath, with carbonate of soda dissolved in the water. As no benefit followed this treatment, the tar-ointment was rubbed on, and in a short time it removed the eruption. A relapse, however, took place soon after the remedy was laid aside, and I directed that it should be again applied, but as the child was not brought back to me I am unable to state whether the eruption was finally removed or not.

Bright's Disease of the Kidney.—M. Barre, divides the pathology of dropsy of the kidney, into three successive periods:—First, one of irritation; second, one of inertness; and lastly, one of cachexia. In the first he recommends removal of the causes by exciting perspiration, and preventing renal inflammation by local bleeding. In the second where all acute symptoms have disappeared, and a general prostration of the renal functions is the leading feature of malady, he recommends stimulants to the limbs and lumbar regions, together with copious cathartics and diuretics; to which may be added tonic remedies, residence in a dry and warm atmosphere, and the use of aromatic or sulphur baths. In the last and now hopeless stage the practitioner's duty is simply to support the patient's strength and ward off dissolution or suffering as long as possible.

The Spleen.—M. Piorry thinks that intermittent fever, through remotely arising from disease of the urinary organs, the uterus, ovaries, &c., orginates directly from affection of the nerves of the spleen. In one hundred and fifty-eight cases of fever of this type he had observed the spleen to be enlarged in one hundred and fifty-four, and attended with pain in eighty-two instances, preceded or followed by intercostal neuralgia. In many of the above cases inflammation of the organ had been caused by blows or falls; but sometimes it had been found simply necessary to (*percuter*) the spleen to cause shivering and the appearance called *goose-flesh* (*chair-a-poule*) on the skin. As long as hypertrophy of the spleen continues, fever remains; when the organic alteration ceases, the febrile access no longer occurs.—Sulphate of quinine, in doses of half a drachm or two scruples, diminishes the size of the spleen in a few minutes, and if rendered soluble by the addition of sulphuric acid, or if the more soluble salts of quinine, as the acetate, citrate, &c. be employed instead of the sulphate, a similar effect will be produced in even a shorter time by a dose of from seven to eight grains. Still more prompt is the action of these agents when introduced per anum, instead of being swallowed; and in order to cure simple hypertrophy of the spleen and chronic intermittent fever, it is only necessary to administer a few doses, such as the last-named, in this way, without any additional treatment. M. Piorry states that in cases of splenic disease he has not observed that the sulphate of quinine had a tendency to slacken the pulse.

Traumatic Amaurosis.—Dr. Wallace, of New York, mentions the case of a man who, during an election riot, received a wound on the right lower eye-lid, below the edge of the orbit, and midway between the foramen infra-orbitarium and the tendon of the orbicularis palpebrarum, which was followed by amaurosis of both eyes, that of the left becoming persistent. With it he could not recognize the least ray of light, the iris was somewhat dilated, and totally immoveable when the opposite eye was closed, but when both were open its motions corresponded with those of the other—the man was afterwards lost sight of.

Use of Gaseous Ammonia.—Mr. Smee recommends the direct inhalation of diluted ammoniacal gas in dryness of the throat, chronic hoarseness, especially in that which is often left as a sequela of influenza, in the relaxed, swollen, and apparently semi-œdematous state of the mucous membrane of the throat, in incipient cynanche tonsillaris, and in old standing cases of asthma, especially in those in which the medical man considers that the internal use of the sesqui-carbonate of ammonia is indispensable, in which the extremities are cold, the pulse feeble, and the general vital powers are depressed; in these cases the local application of ammonia is particularly grateful, the patient feeling a glow after its exhibition, and the warmth first imparted to the lungs extending by degrees over the whole system. The presence of inflammatory symptoms, local or general, counter-indicate its use. Ammoniacal gas is an antidote to prussic acid and bromine. Its medicinal action in the complaints above enumerated, appears to be exerted in inducing a secretion of fluid from the parts with which it comes in contact. The most convenient mode of administering it, is to use the vapour that spontaneously exhales from solutions of ammonia, no solution being used stronger than the liquor ammoniæ of the shops, or weaker than the same diluted to 20 or 30 times its quantity of water.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Wendesday, April 12, 1843 :—

T. Morris, J. Kilner, J. Machen, J. Stevens, A. Eccles, A. H. Williams, J. Whitterow, H. H. Radcliffe, F. P. Bowen.

London: Printed and Published by JAMES ANGERSTEIN CARFRAE, 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex.—April 22d, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 188. Vol. VIII. LONDON, SATURDAY, APRIL 29, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE IV.

In the preceding lectures I have explained in detail the composition of carbonic acid, water, and ammonia, and have not only considered them in reference to their abstract properties and to their important bearings on organic chemistry, but also as enabling us, in a very ready, and as you have seen, in a very satisfactory manner, to determine the relative quantities of the elementary bodies, as evolved in organic analyses. Thus, for instance, when we wish to determine the quantity of carbon in any body, we convert it into carbonic acid, and having done so, we obtain a datum from which we infer the quantity of carbon; and so, when we want to determine the quantity of hydrogen in any organic product, we convert it into water, and in that form weigh and determine the quantity of hydrogen. In other cases, upon which I shall touch more at length to-day, we convert the nitrogen contained in animal or vegetable matters into ammonia, and so determine its quantity.

The data upon which these calculations are respectively founded are, then, the composition of carbonic acid, of water, and of ammonia; carbonic acid, containing 6 parts of carbon in 22—water, 1 of hydrogen in 9—and ammonia, 14 of nitrogen in 17.

Now there is an important product not unfrequently formed in our analytical operations on azotised bodies, which is called *cyanogen*, and is a compound of carbon and nitrogen symbolically represented by NC_2.; its composition being as follows:—

	Atoms.	Wghts.	per Ct.	vol.	op. grs.
Carbon......	2....	12....	46·1....	1....	0·843
Nitrogen	1....	14....	53·9....	1....	0·976
	—	—	—	—	—
Cyanogen....	1	26	100·0	1	1·819

Cyanogen combines with hydrogen and produces hydrocyanic acid, represented by NC_2H., or, in other words, if to 26 of cyanogen you add 1 of hydrogen, you produce hydrocyanic acid. Now we find in many instances that organic matters containing nitrogen cautiously heated in contact with certain bases, yield cyanogen; there are, in fact, many animal and vegetable bodies from which cyanogen may be thus procured.

Now, we will just look at two or three of the leading properties of cyanogen. In the first place it is a gaseous body, which may be burned in contact of, or mixed with air, with a beautiful purple or lilac coloured flame, and, under these circumstances, the products of its combustion are nitrogen and carbonic acid; that is, by the action of the oxygen of the atmosphere, the carbon is burned into carbonic acid; the nitrogen remains unchanged. If therefore to the residue of this combustion we apply the test of lime water, we find the carbonic acid is taken up and its presence indicated by the milkiness which ensues.

(Mr. Brande performed this experiment shewing the carbonic acid as well as the residuary nitrogen.)

There are some other peculiar features belonging to this body which I shall endeavour to show you. I have here a mixture of cyanogen and oxygen, (the oxygen being substituted for the common air of the previous experiment); apply a taper to this mixture and it burns rapidly, and, indeed, with loud explosion, but the result is the same as before; the carbon only is burned, and the nitrogen remains. Now, if instead of burning it in this way rapidly, I cause it to undergo a more gradual combustion, I may so adjust the process as to burn not only the carbon, but the nitrogen, also; I can, thus, in fact, obtain not only carbonic acid, but also nitric acid by the combination of the nitrogen with the oxygen. I will, now, endeavour so to burn, or oxidize cyanogen as to obtain these results, and this I can do, by adding excess of oxygen to the cyanogen, and then introducing into the mixture a heated coil of fine platinum wire; you, now, observe that the temperature of the platinum rises to bright redness, and that the bottle becomes filled with the yellow fumes or vapour of nitrous acid, mixed with carbonic acid.

(Mr. Brande, in performing this experiment, explained the relative proportions and other details of the result.)

Here, then, you may observe, that in decomposing a compound of nitrogen and carbon in contact of excess of oxygen, I have obtained nitric acid, and you may recollect that in the case of the decomposition of ammonia under similar circumstances, I also succeeded in an analogous production of nitric acid. Now some such change or acidification of nitrogen appears sometimes to occur spontaneously, for we not unfrequently find incrustations of nitric salts upon the walls of cellars. In these cases the nitrogen is probably derived from ammonia, and the essential conditions appear to be the presence of ammonia, oxygen, and an alkaline base, such as potash, soda, or lime. Nothing is, in fact, more common than to find considerable quantities of nitric salts in calcareous rubbish and soils which have been in contact of decomposing organic matter containing nitrogen; upon this principle, artificial nitre beds have been constructed; and the vast deposits or formations of nitrate of potash found in India, and of nitrate of soda in South America, probably owe their origin to some similar concurrence of circumstances; to the *combustion*, if I may so call it, of nitrogen.

The characters by which the *nitrates* are recognised are sufficiently simple; they are all decomposed and furnish oxygen, by continued exposure to a red heat; when acted upon by sulphuric acid, they give out the vapour of nitric acid; a piece of paper dipped into a solution of a nitrate and dried, burns like touch-paper; and, lastly, when these salts are mixed with a little charcoal, and thrown into a red hot crucible, or into the fire, they deflagrate in the manner of gunpowder. [A variety of experiments were shown illustrating these, and other properties of the nitrates.]

Now I believe I have given you a sufficiently correct and extended account of such of the compounds of carbon, hydrogen, oxygen, and nitrogen, as are likely to be concerned in our future inquiries, and have paved the way for a more detailed illustration of the actual processes and manipulations, the principles of which I have separately endeavoured to explain and illustrate. I have already laid the foundation of the information I have to bring before you on this subject by showing you how we determine the quantity of carbonic acid, water and ammonia, into which we convert the carbon, hydrogen, and nitrogen, of the materials we have to work upon; and how, from them, we infer the proportions of the ultimate elements.

You may recollect that, in addition to the substances which I have so frequently named, that is, carbon, hydrogen, oxygen, and nitrogen, there are certain other elements occasionally contained in organic bodies, and you may perhaps ask why I have not dwelt more at large on them? The truth is that they are rather accidental and occasional than constant substances, although sometimes they perform a very important part. Now one of them is *iron*, which is contained in notable quantity in the blood of the higher order of animals; indeed, blood cannot be properly formed unless iron be present. Accordingly, in the ashes of blood and parts containing blood, and also in the ashes of some vegetables, iron may be detected; and indeed, it is most probable that the origin of the iron in the blood of animals must be ultimately sought for in the vegetable kingdom, from which animals exclusively derive the elements of their fabric. Then there is another body, *sulphur*, occasionally present in very considerable quantities. Sulphur is contained in the white of an egg; it is contained in the blood; it is contained in mustard seed, in the juice of the cabbage, and in a number of other vegetable and animal products, — it may, in fact, be considered as one of the most frequently occurring of these occasional elements of organic matter. Nor must we here forget *phosphorus*, which constitutes the basis of the bones of animals; the earthy or hardening principle of bone being chiefly phosphate of lime. Now I call these, and others which I shall not now specifically allude to, occasional or incidental elements of organic matter; thus contrasting them with carbon, hydrogen, oxygen, and I may add nitrogen, which are universally present, and without which no complete organic fabric can be built up. Hence it is that I have brought these elements so frequently, and under so many aspects before you; considering them, in the first place, in reference to their abstract properties, and afterwards to such of their combinations as especially bear on organic chemistry. You recollect that we considered water as a compound of hydrogen and oxygen in single atomic equivalents; carbonic acid as a compound of carbon and oxygen, in which 2 atoms of oxygen and 1 of carbon are combined; then we come to that curious body, ammonia, in which 1 atom of nitrogen and 3 atoms of hydrogen are combined. Now it seems very extraordinary, but so you have found it is, that all organic matter, with the exception of those bodies which contain sulphur, phosphorus, iron, and a few other substances, are constituted of these four principles—hydrogen, carbon, oxygen, and nitrogen; and that, when they undergo entire and thorough decomposition, they furnish water, carbonic acid, and ammonia. I have also shown you that water, ammonia, and carbonic acid, are to be found in the atmosphere; and that from the atmosphere they are taken up decomposed, and their elements assimilated by plants; from plants they go, through the medium chiefly of the graminivorous tribes, into the animal world; from the animal world they return by decomposition and putrefaction, back to the atmosphere, to be again subservient to the same circle of changes.

It is with the further investigation of these matters that we have now to deal, and we are to proceed in the first place to settle two questions in respect to the ultimate elements of organic bodies, namely, what are their nature, and in what proportions do they exist; now, in reference to these questions, certain useful inferences may often be drawn from very simple data.

If, for instance, I find that organic bodies evolve during their ordinary combustion, a large quantity of black smoke, I infer the presence of much carbon; if I find that they produce a great deal of water, I infer a corresponding proportion of hy-

drogen. If I rub an organic body with potash, soda, or lime, and find that ammonia is evolved, I infer the presence of nitrogen; and so having settled these preliminary matters, we derive from them useful hints for the regulation of our more accurate and refined details of analysis in proceeding to determine the quantity of these bodies, and then to ascertain the relative proportions in which they exist in organic matter.

We will now look at some of the minutiæ of these analytic operations having, for their object the accurate determination, not merely of the nature, but of the proportions of the elements of organic products; and you will perceive that these operations consist in the skilful application of those principles of research which I have already brought generally before you; it will, at the same time, be obvious that in the limits of one of these lectures, and before so large and distant an audience I can only furnish an outline of the details of manipulations which include some of the most delicate and troublesome operations of the laboratory. Let us, however, do the best we can; suppose for instance that my object is to ascertain the composition of *sugar*, I first, by methods already described, ascertain that sugar is a ternary compound of carbon, hydrogen, and oxygen, and that it contains no nitrogen; then, I proceed to the determination of the relative proportions which the said carbon, hydrogen, and oxygen bear to each other; to this end, I have to convert the carbon into carbonic acid and the hydrogen into water, and, then, knowing the composition of carbonic acid and of water, and having so managed my proceedings as to be able accurately to determine the weights of those compounds which the sugar has yielded, I at once and directly learn the weight of the carbon and of the hydrogen which the sugar contained, and by comparing their joint amount with the original weight of the sugar, I ascribe the deficiency to oxygen. Now, all this is most effectively attained by burning a carefully weighed quantity of sugar in an excess of pure oxygen gas.

Dr. Prout, to whom we owe many valuable and original researches into the ultimate composition of organic bodies, was the first to adopt this system of combustion in oxygen, and he contrived for the purpose a very effective though somewhat costly and complicated form of apparatus which enabled him to collect the carbonic acid and other products of combustion, and accurately determine their respective quantities, and although much has lately been said respecting the inefficiency and inconvenience of Dr. Prout's process, yet, after all, if carefully managed, it is one of the best. But many other methods have been devised for the purpose of so carrying on the combustion of organic bodies as to allow of the accurate determination of the quantities of water and of carbonic acid resulting from the oxydizement of their hydrogen and carbon, and in all later processes, the oxygen required for this purpose has been derived from some compound in which it exist in a solid state; there are, for instance, certain salts and oxides of metals which when heated alone, either give off nothing, or merely puro oxygen; but which when heated along with organic matter so impart oxygen as to burn the whole of its carbon and hydrogen. Chlorate of potash, oxide of copper, and chromate of lead, are the substances lately used in these analyses as sources of oxygen, and I will now shew you the mode of using them and state what are their respective merits and demerits.

[Mr. Brande now went through a series of illustrative experiments.]

In employing *chlorate of potash*, the matter for analysis is mixed with a proper proportion of that salt, and formed into small pellets, which, by a peculiarly constructed stopcock, are successively let fall into a red hot glass tube, and then the carbonic gas and water, which are produced, are separately collected. This process answers very well in respect to certain substances; but it is almost impossible to effect the perfect combustion of the organic matter by means of it, and the evolution of the gaseous products is most inconveniently sudden: by reference, however, to the analyses performed in this way by Gay Lussac and Thenard, it will appear that in very careful and expert hands, the method is susceptible of considerable accuracy.

The substance, which of all others appears best calculated for these combustions of organic bodies, is *oxide of copper*. When heated alone, it suffers no change, but in the presence of carbon, or of hydrogen, carbonic acid and water are formed, and the oxide is restored to the state of copper. The objection to oxide of copper is the facility with which it absorbs moisture from the air, and the difficulty of avoiding errors from that source.

Another substance which has been resorted to for the purpose of effecting the combustion of carbon and hydrogen in organic analysis is *chromate of lead*; it has the advantage of not being hygrometric, and, in some particular cases, has other points of preference.

You will observe, that in all these cases, I am assuming that the organic substance to be analysed is either a ternary compound of carbon, oxygen, and hydrogen; or a mere binary hydrocarbon, and that I arrive at the proportion of carbon from that of the evolved *carbonic acid*, and of the hydrogen from that of the produced *water*; the loss upon the original weight, being referred to oxygen. Thus, if I burn fifteen grains of *sugar*, by any of the methods which I have pointed out, I shall obtain 22 grains of carbonic acid, which are equal to 6 of carbon, and 9 grains of water, equal to 1 of hydrogen. I thus learn, that 15 grains of sugar contain 6 of carbon, and 1 of hydrogen, and that the deficiency, amounting to 8 grains, is oxygen. In sugar, therefore, the relative proportion of the hydrogen to the oxygen is as 1 : 8, or the same as in water; hence it is that sugar, and other bodies similarly constituted are said to be compounds of carbon and *water*.

Now, in conducting these analyses, there are several points which require extreme care and delicate manipulation. In the first place, the organic matter, or subject of analysis, must itself be cautiously brought to an uniform state of purity and dryness—to a standard condition that is: then, the oxide of copper must be pure and dry, and so thoroughly mixed with the organic matter, and in such proportions as to ensure perfect combustion: then again, the tubes in which the combustions are carried on, must be such as to resist fusion, and even change of form at a high heat; and lastly, the means of heating must be such as to enable us to regulate the temperature with considerable precision, and to heat either the whole, or parts of the combustion tube, as may be required.

Having got over these difficulties, we now come to the collection of the products, viz., to the means of so collecting the carbonic acid and the water, as to enable us to determine their weights with the utmost precision. We attain these objects, in respect to *carbonic acid*, in two ways; either we collect it over mercury in the state of a dry gas, and from its volume calculate its weight—or we convey it at once into a strong solution of caustic potash, by which it is perfectly condensed, and are thus enabled to weigh it. The latter of these operations is now always preferred, and the very elegant apparatus for the purpose suggested by Liebig leaves little to be wished for as regards this part of the process.

Now in regard to the determination of the *hydrogen*, which is weighed in the form of *water*: this is almost invariably effected by carrying the vapour of the water formed in the combustion tube, over small fragments of well dried chloride of calcium carefully weighed in a previously tared tube; it entirely absorbs the water, and one-ninth therefore of the increase of weight which the tube sustains is the amount of the orginal hydrogen of the subject of analysis.

[Mr. Brande now went through these several operations,—first collecting the carbonic acid and the water in separate experiments, shewing the manipulations in regard to filling the combustion tube, heating, condensing the products, weighing, and calculating the results; and then he went through the process as usually conducted, employing Liebig's form of apparatus, and operating upon sugar.]

Now in all cases where *nitrogen* is present, it is better to perform a separate and distinct operation in order to determine its quantity; and the process which is most accurate, and at the same time most easy of execution, is that of Varrentrapp and Will, which I have already explained to you: we will, however, in order to complete our illustration, go through this process, and for the purpose of experiment, I will take a specimen of the gluten of wheat.

[Mr. Brande now mixed four grains of this gluten with an adequate quantity of a mixture of lime and soda, and having heated this, and condensed the evolved ammonia in a bulbed tube, containing muriatic acid, he afterward added chloride of platinum, and described the method of collecting and weighing the resulting ammonio-chloride, and thence deducing the weight of nitrogen, as explained in his former lecture.]

If nitrogen be present in the form of nitric acid, it will not be decomposed by heating it with quick lime, and, therefore, should nitric acid be present, I am obliged to have recourse to other means, such as passing it over metals, by which it will be decomposed, and the nitrogen set free.

Nitrogen is an extremely important element in organic matters, and one of the great objects in practical agriculture consists in fixing, or absorbing it: this is a subject which we must discuss more at length hereafter. There is a curious question, arising out of this matter, which is, how far nitric acid can itself be considered as a manure; or how far, in fact, it can be considered as contributing to the nourishment and growth of vegetables, as a source of nitrogen. Ammonia certainly contributes to the growth of plants, and so does nitric acid in some way or other; but we do not understand *how*. We know that nitrate of soda, nitrate of potash, the common nitre of commerce, and other nitrates, are very important manures; but these belong to the more advanced part of our inquiry. There are several manures, as they are called, that seem to act merely by fixing carbonate of ammonia, and thus become very important agents in the growth of crops; for instance, there is *gypsum*, or sulphate of lime, which when reduced to a powder, and moistened, contributes very much to the growth of certain crops, and a great part of its operation seems to depend on its power of combining with carbonate of ammonia; it does, in fact, undergo decomposition itself. I take, for instance, a solution of plaster of Paris, or gypsum, (for it is sparingly soluble in water,) and if I add to it carbonate of ammonia, (one of the results of the decay of organic matter,) decomposition takes place, and there is thrown down carbonate of lime, or chalk, and sulphate of ammonia remains in solution in the water. Sulphate of ammonia is not so volatile as carbonate of ammonia, and it does not go away until the vegetable comes to look for it, and take it up for food. There is an enormous quantity of sulphate of ammonia manufactured in our gas-works, and it is found to be a very valuable manure; that is, because it contains nitrogen; because it contains ammonia. The ammonia formed in the gas-works was formerly suffered, as I have already stated, to go to waste, but now it is carefully abstracted, and by conversion into sulphate of ammonia, is becoming a very important production, I think, in reference to agricultural operations. Many burned clays also act as ammoniacal absorbents. If I burn a piece of clay, and as soon as it becomes cool, pour on it a few drops of caustic potash, it exhales no odour, and you will observe nothing remarkable with regard to it; but if I expose it for some time to the action of the air, and then test it, it exhales a peculiar odour, arising out of the presence of ammonia. Now, many of these clays, although they also operate in other ways, derive a great deal of their value from fixing, or, as it were, drawing ammonia into their pores. Charcoal is another substance which, in a remarkable degree, absorbs ammonia from the air, and thus becomes a valuable manure, and contributes to the fertilization of the soil.

I think that as far as manures generally are concerned, we may say that their value is mainly as to the quantity of nitrogen they contain. If, for instance, we take certain vegetables that contain very little nitrogen, such as potatoe or rice, we can live on these, but we are obliged to eat enormous quantities of them ... the other hand we

can live upon comparatively small quantities of animal fibre, or of those vegetables that contain a large quantity of what we call *gluten*, inasmuch as there is a considerable quantity of nitrogen contained in their composition. We find, in fact, that the relative value of different kinds of food may be expressed in terms relating to the quantity of nitrogen they contain; and this is one reason why I have dwelt so much upon the means of determining the presence of nitrogen and its quantity. Wheat, peas, and several other grains contain a large quantity of nitrogen, and hence their comparatively great nutritive power, approaching nearer in fact to those animal substances which constitute the most nutritive of all sorts of food.

We have, now then, found that carbon, hydrogen, oxygen, and nitrogen, are the four principal elements that we have to deal with, and that nitrogen constitutes a leading, and important one. We must remember that of these elementary bodies there is only a certain or limited quantity available at any one time, and, moreover, that the original quantity of these and other elements assigned to our planet by the Almighty at the time of its creation, can in no way be increased or diminished; in proportion, therefore, as our population increases, it is our business to see that these ultimate constituents are so arranged into useful and nutritious forms as to be fitted for the support of life, for though we can neither make nor change the ultimate elements of matter, we are gifted with great power over them, in respect especially to their combinations which we are enabled to direct and modify.

Having not given you an outline of that part of our subject which relates to the nature of the *ultimate* elements of organic bodies, and of the means of determining their relative proportions, I propose in the next place to shew you how we proceed in respect to the determination of what may be termed their *proximate* elements or principles, and what are the methods of analysis applicable in respect to them. Let us, for example sake, operate upon wheat flour. Now, the ultimate elements of wheat flour are carbon, hydrogen, oxygen, and nitrogen, together with very small relative proportions of other substances forming its saline and as it were accidental constituents. But, if I wash wheat flour with water, I find that I can separate it into at least two distinct proximate principles, namely, *starch* which floats away in the form of a fine white powder, and which gradually subsides; and *gluten* which remains in the form of a viscid or elastic substance; and, again, if I subject this residuary gluten to the action of successive solvents I can resolve it in *fibrine* and *albumen*, and in the water used for washing the flour I find *sugar* and *gum*; here, then, you see I resolve flour into several distinct substances which admit of separation from each other, and are identified by peculiar properties, without any reference to their ultimate constitution, and which I call the *proximate elements* of the flour. Each of these proximate elements will of course require to be separately considered in reference to their *ultimate composition* and such inquiries lead, as you will find, to very curious and important results.

Again, in reference to *proximate analysis;* here is some turpentine, as it flows from the fir tree. If I distil it along with water, I find that a light, fragrant, and highly inflammable oil passes over, and that common resin or colophony remains in the retort; here, therefore, I resolve the turpentine into its proximate elements, which are oil and resin. Now, to shew you how intricate these proximate analyses occasionally become, and the extent to which modern chemists have carried their researches in this direction, I will only instance the analysis of opium. 1,000 parts opium yields us the following proximate principles, in the annexed proportions:

Morphia	81
Narcica	30
Thebaia	30
Meconia	6
Codeia	7
Narcotina	80
Meconic Acid	55
Extractive	260
Gum	202
Caoutchouc	50
Resin	31
Water	14
Impurities	124
	30
	1000

In our next lecture, then, we will proceed to examine the principal proximate constituents of organic bodies, to determine their distinctive characters, and to see how far their ultimate analysis enables us to group them into distinct classes.

ON THE LAWS OF THE DEVELOPMENT OF ORGANS; OR TRANSCENDENTAL ANATOMY APPLIED TO PHYSIOLOGY.

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SUMMARY.—*Direct relation of development between the limbs and the inter-vertebral ganglia in the vertebrata as well as in the invertebrata—Physiological proofs of the transposition of the ganglionic nervous chain in the invertebrata—Appearance of the organisms from the circumference towards the centre—Their primitive duality—Coalescence of the two halves originally composing them—Composition of the ovum before impregnation—Position of the proliferous vesicle—Action of impregnation on this vesicle—Appearance of the two germinative sacs, their formation, &c.*

WE must here remark the similitude of relation existing between the intervertebral ganglia of the vertebrata and the nervous system of the invertebrata. We know, in fact, that in the mammifera and man the intervertebral ganglia are developed in direct proportion with the limbs. A similar relation has been shown to exist in the *mollusca* with respect to their nervous system, which is in direct accordance with the arrangement of the locomotive apparatus. Now, we all know that it is upon this latter system that Poli and Cuvier have grounded their so celebrated classification; and, in like manner, M. de Blainville, guided by the same consideration, has regarded the *cirripeda* as the connecting ring between the *mollusca* and the *crustacea*.

One of the least contested applications of the theory of *analogues* is that whereby the cranium is regarded as an assemblage of *vertebræ*. This principle is, however, far from confined to the osseous system. We have already pointed out the concordance of the two branches in the comparative anatomy of the brain, as well as in that of the nervous system; we have shown that the intervertebral ganglia had their representatives in the sphenoido-ophthalmic, the spheno-palatine, the maxillary and the sublingual ganglia. This granted, we have recognised in these ganglia the *analogues* of those surrounding the œsophagus of the invertebrata. It thus follows, in the first place, that in the two divisions of the animal kingdom the opening of the alimentary canal is surrounded by a ganglionic ring; and, in the second place, that in both divisions also, these ganglia send branches to the organs of sense.

Among organised beings, animals alone are endowed with the two characteristic properties, sensibility and motion; the nervous system is the seat of both these functions. The question then arises, is each nerve, or each part of the nervous system, equally capable of developing and of transmitting both these properties?—or do there exist nerves and parts in the cerebro-spinal axis some destined especially to sensibility, and others to motion? We must all be aware of the antiquity of the division of the nerves into nerves of sensation and nerves of motion. We know, also, how unsuccessful were the attempts of our ancestors to demonstrate the isolation of these two actions, of which they had a vague presentiment. These ideas, pursued at various times, with more or less perseverance, have however in the present day, acquired a full degree of certitude. Experiments repeated by all physiologists since Charles Bell and Magendie, have shewn that of the two sets of nerves proceeding from the inter-vertebral ganglia, the anterior branches are more particularly the seat of motion, whilst the posterior branches are especially the seat of sensation. This speciality of action, though not continued with the same precision along the anterior and posterior columns of the spinal marrow, fully justifies the importance usually accorded in our works to the inter-vertebral nervous system of the superior animals, at the same time that it serves as a decisive proof of the transposition of the organisms in the invertebrata, a fact of which organogeny has unfolded the original cause.

If indeed this transposition be fixed, if by reason of the primitive relations of the embryo with the umbilical vesicle, the exterior apparatus of the invertebrata are of necessity transposed, so that what in the vertebrata is directed downwards is in them placed towards the upper surface, and *vice versa*, we see as a consequence that this change in the outer relation of the parts must also affect the ganglia composing their nervous system. Now, these ganglia being the *analogues* of the inter-vertebral ganglia of the superior animals, we perceive likewise that, the ganglion being turned round, the properties of the nervous branches proceeding from it must also be changed in position, that is to say that sensibility, which in the vertebrata is seated in the posterior branches, must in the invertebrata be placed in the anterior branches, while motion, devoted to the anterior branches in the superior animals, must principally reside in the posterior branches in the inferior animals. Such ought according to our principle to be the case. Now experience has shown that the parts possessing most sensation are precisely those to which the anterior branches of the nerves proceeding from the ganglia are distributed, whilst those most endowed with motion are, on the contrary, principally supplied by the radiations derived from the posterior branches. So that, in this respect, the invertebrata are, strictly speaking, inverted vertebrata. Physiology thus confirms the data furnished by organogeny; it bears out the principle of unity of design in the animal kingdom, modified simply by the transposition of the organisms in the two branches.

Such are the characters and the tendency of comparative organogeny. It has shown us in the first place that, in their primitive state, the organisms are divided and composed of elements which, by their association and incorporation, are constantly changing the form of the organs from the period of their first outline up to their perfect development; and in the second place it has shown us that the whole animal kingdom, even up to man, is subjected to this change during the period of development, called embryonic, in each being. Human organogeny then becomes the term of relation, the criterion by which to judge of the organogeny of animals. Comparative organogeny, thus considered, has shown us in its turn that in proportion as we recede from man the organisms remain more and more divided, being permanently maintained in conditions of greater or less simplicity which, in the organisms of man, are merely transitory. Comparative anatomy, which is directed to the study of the organisms of animals, thus presents to us, in a permanent manner, the transitory organogeny of man; it shows us these organisms arrested so much earlier, or disappearing totally or in part, in proportion as we descend in the series; so that in their turn the superior animals, at whatever point of the scale they may be taken, have their organogeny reproduced in a permanent manner by those animals which are their inferiors. Such is the vast picture presented by zoogeny under this interesting point of view.

We now, however, come to a much more difficult part of the subject, and it was not without reason that the followers of Haller dwelt so strongly on that endless decomposition of organisms, as unveiled by the progress of anatomy. After having reduced the animal organisation into such fractional divisions, what, they asked, will you then do? How construct with these ruins those animal machines so harmonious in their parts, so admirable in their actions? Considering our want of know-

ledge, would it not be better, said they, to believe that all these things pre-exist, and that in the most minute state in which they can be rendered visible to science, animals are merely a repetition on a small scale, or a miniature of what they present in their perfect state? But nobody at the present day, without shutting his eyes to evidence, can believe in the doctrine of pre-existences; and, in spite of the noise which this hypothesis created in the eighteenth century, it is now for ever buried in the tomb of oblivion. The question of the formation of organisms which gave rise to it remains, however, in full force; and it is this question which we must now attempt to resolve. Instead of being confused by this universal division of parts as every where exhibited by zoogeny, this general fact constitutes the point from which we shall start, that we may thus be enabled to appreciate the gradual movements by which these parts progress towards their ultimate constitution. We shall, moreover, to prevent our being led astray in this difficult study of organic movements, rigorously proscribe the employment of occult forces, a term merely used as a cloak for our ignorance. Galileo sought not the causes of the earth's movement; he proved that it does move, by indicating the order of its movements. Newton calculated the movements of the planets, without troubling himself about the cause of the attraction which draws them one towards the other. Harvey traced the course of the blood, but did not occupy himself with the final causes of the circulation. Why then should we trouble ourselves with the final causes of those vital movements of formation which escape our means of investigation?

Living matter being given, in what way are its movements accomplished, so as to bring it into a state of organisation? Such is the general problem of animal organogeny, and which can be solved by observation alone. Now, in its progress towards organisation, living matter moves from the circumference towards the centre. The outline of every organ is first formed by its sides; every organ appears at first by its surface, becoming more and more concentrated in proportion to the advance of organisation. It is this movement, this order of appearance of the organisms, which I have designated by the name of the *centripetal law of formations*. Such is a simple interpretation of nature. From this peripheric mode of formation of the organisms results their primitive duality; the one half of the elements which ought to constitute them being to the right of the median line of the embryo, and the other half to the left. This duality of the organisms, which we have designated under the name of the *law of symmetry*, is thus a constant fact, necessary and indispensable to every organic development. Their reunion, or coalescence, at the period when the organisms lay aside their primitive duality to become single, is another fact of constant necessity. The uniform and invariable mode according to which this coalition takes place, has been explained under the title of the *law of conjugation*, which is merely a deduction of the law of homœozygy. Thus every apparatus, every organism which we may trace, will appear at first at the exterior of the matter becoming organised; it will invariably be double; the one of its halves will be to the right, the other to the left, and in certain organisms these two halves will become gradually approximated until finally united and incorporated together. Such are the general laws of organogeny, to which every organism is strictly subjected during the course of its development. Now, if these laws are in perfect accordance with facts, we shall find them in action before impregnation, and see them, after fecundation, unfolding themselves in all the acts and phenomena tending to the formation of the animal.

Every one at the present day knows that before impregnation, the female ovum is composed of three fundamental parts; of an external membrane the chorion; of an especial vesicle named proliferous; and of a granular mass, which is the vitellus. The order of formation and the position assumed by these two latter parts, however apparently indifferent, become exceedingly interesting when considering the subject of generation. The proliferous vesicle is the first developed; it reaches its development while the vitelline mass is still colourless, devoid of yellow globules, and without its proper covering; it then occupies, according to M. Wagner, the centre of this albuminous mass, whence it becomes insensibly raised in proportion as the vitelline globules, whose specific gravity seems to be greater than that of the clear liquid filling the proliferous vesicle, are formed. By this evolution, the proliferous vesicle arrives at the surface of the vitellus, which then becomes clothed with its proper membrane and presents at the point corresponding to the proliferous vesicle, a disk of a clear yellow colour (the proliferous disk), the object of which is to keep the vesicle in its place, and which we have consequently named the proliferous ligament. The eccentric position of the generating vesicle and the apparatus which fixes it in this position, are indispensable preliminaries to impregnation taking place by the spermatic fluid of the male, or the zoosperms. Whatever obscurity may still hang around this first act of generation, one thing is plainly agreed on by both ancient and modern authors, and that is, that the proliferous vesicle and the zoosperms must be brought into contact for fecundation to take place, and hence the necessity of the eccentric position of the proliferous vesicle. This eccentric position is then one of the first conditions of fecundation, and the object of the proliferous disk is to maintain the vesicle at a fixed point of the surface of the vitellus, and thus prevent its shifting to different parts of its circumference. The subsequent stages of fecundation will shew us the full importance of this subjection of the proliferous vesicle at a given point of the periphery of the vitellus.

I shall not attempt to explain that which passes on during the act of fecundation itself: as I said before, I shall confine myself exclusively to such facts as are cognisable to our senses. Now, we know from observation that the rupture of the proliferous vesicle is the immediate result of fecundation: by this rupture the fluid which it contained, being impregnated by the action of the seminal fluid, escapes and becomes effused upon the vitellus. What now becomes of this animal semen? It is here that nature shows all her foresight, and reveals the importance of the proliferous disk. Suppose, in fact, that the proliferous vesicle were liable to become displaced upon the surface of the vitellus, its superficial position would always render it susceptible of impregnation; but what would become of the animal semen which it contains? Spread over the surface of the vitellus, it would most frequently remain unfruitful. But the proliferous vesicle being tied down, as it is, upon the proliferous disk, its rupture turns the fluid into the capsule of this disk, and it is thus maintained in relation with the only part of the vitellus which can favour its ulterior developments. If the superficial and external position of the proliferous vesicle be, as we have said, indispensable to render impregnation possible, we see then that the eccentric position of the proliferous disk at the exterior of the vitellus is a necessary consequence of the centripetal law. The one fact governs the other. Thus is the first act of generation a phenomenon founded on the principle of the eccentricity of organisms. The eccentric position of the proliferous disk, and the reason of this position being thus established, the next point is to observe that which is passing in its interior. All observers, since the time of Professor Dœllinger have stated, that the proliferous disk is transformed into the blastodermic membrane. But how does this transformation take place? In what consist the first outlines of the embryo, which appear in this membrane? This is the most difficult question in embryogeny, and perhaps in all anatomy; for it is no less than asking us to define the organisation in its passage from a state of nothingness to that of existence, and to determine the primitive forms under which the animal appears in the proliferous disk. If we consider that these primitive forms are very transient, that they are of but a few hours duration, and that they are manifested sometimes sooner, sometimes later, within the ova subjected to incubation, we shall, perhaps, see in this circumstance the cause that has led observers astray, at the same time that we shall find some excuse for those hypotheses which have usurped the place of facts.

The twelve or fifteen first hours of incubation are employed by nature in detaching the proliferous disk, both from the vitellus, and from the vitelline membrane: no part, however, of the work of germination going on in the interior of the disk can yet be appreciated, this body appearing homogeneous throughout its whole extent. At about the sixteenth hour, under the Parisian climate, we observe the first streak which precedes the development of the organisms. This streak consists in a line, obscure at first, which appears of a darkish colour to the eye, though lighter under the microscope, and which occupies the axis of the proliferous disk. This primitive line is manifested at first towards the middle of the disk, it then extends upwards, where it is rather broader, and subsequently downwards, at which part it becomes narrower, and often terminates by an almost imperceptible line. At the same time that this phenomenon takes place upon the median line, the edges of the circumference of the disk become elevated and clearly defined upon the vitelline mass. Commencing about the sixteenth hour, these phenomena are usually terminated towards the twentieth, or, at most, the twenty-fourth hour of incubation: they are evidently the result of the metamorphoses taking place during this period in the composition of the proliferous disk. But in what does this metamorphosis consist? What is the result of this primary evolution, the signs of which we have been tracing? We find produced two germinative sacs (*sacculi germinativi*), two large *embrygenous* cells, bearing in them all the elements of the organisms of the future embryo, which during its subsequent metamorphoses are successively developed. The first act of fecundation consists then in separating into two equal part the proliferou disk, in dividing it into two sacs, a right and a left, of perfectly symmetrical proportions. These two sacs or cells, project at first outwards, then inwards; thus producing, between each sac, an interval which separates the one from the other, and gives to each its proper individuality; this space is what has been denominated the *primitive line*. The primitive line pointed out by all modern observers is, then, neither the zoosperm (MM. Prevost and Dumas), nor the primitive rudiments of the spinal marrow (M. Wagner), nor those of the dorsal chord (M. de Baer); it is simply a hollow space between the two germinative sacs. The correct appreciation of the nature of this primitive line becomes of great importance in the theory of centripetal development. It is in truth the symbol of the grand fact of the symmetry and duality of the organisms, which we shall find everywhere reproduced; a symbol of which the two sacs give the material realisation from the first moment of embryonic life.

We may readily conceive the importance of this realisation of the centripetal law, and of the law of symmetry, by the manifestation of the two germinative sacs from the commencement of incubation. The elements of the organisms are thus separated into two equal parts; the one half residing in the one sac and the other half in the other. The effect of their developments must then consist in bringing these two halves into contact, and thus constituting a perfect whole. This is precisely what observation and experience ought to show us. Before entering, however, into this part of the physiology of developments, we will say a few words as to the anatomical structure of these germinative sacs. Each of them is formed of three layers possessing different characters. In the first place, there is the external or serous layer; then a second, placed immediately below it, the vascular layer; and a third, subjacent to this, the mucous layer. The different nature of each of these three layers, the important characters which they play in the formation of the organisms, require us for an instant to direct our attention upon the order of their appearance. Does this appearance take place from without inwards or, on the contrary, from within outwards? It is needless to say that, according to the system of centrifugal development, the latter would be the mode of nature; that we should have first appear the mucous layer, then the vascular, and lastly the serous or most external; whereas, in the theory of centripetal development, an exactly inverse order of appearance would take place. Now, all modern

embryonic researches unanimously point out the fact, that the external layer is the first developed, then the vascular, and lastly the mucous; thus establishing the centripetal order of development in these germinative sacs.

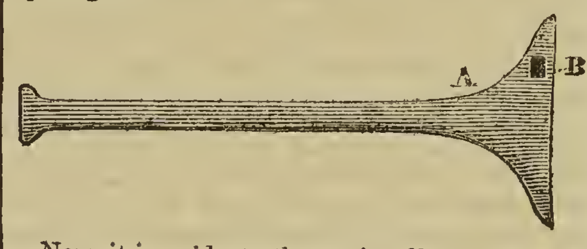
The triumph of truth over error is undoubtedly important in a subject of this nature; but this importance will become greatly enhanced if we find each layer to possess a special office in the formation of the organisms; if, for example, the serous layer give rise to the spinal marrow, the vertebræ, the cranium, the organs of sense, &c.; the vascular layer to the heart and the sanguiferous system of the embryo; and lastly the mucous layer to the intestinal canal and its numerous dependancies. We see that, in this case, the order and succession according to which the layers of the germinative sacs may appear, will give to us the key of the succession and order which the organisms themselves should undergo in their manifestation; that, in accordance with the centripetal law, we shall first of all find the most external or serous layer giving birth to the spinal marrow and the brain, which will commence the embryonic developments, and that around this nervous axis will be grouped the vertebræ, the cranium, the senses and their dependancies; that the organisms of circulation will succeed those of relation; while, in accordance with the development of the germinative layers, the organisms of nutrition will be the latest in their appearance. This order of formation, however different from what one might be led to suppose from a consideration of adult animals, or from all preconceived notions on this subject, is in reality precisely what occurs. We constantly find the external layer commencing the developments; so that we see successively formed the spinal marrow and the brain, the vertebræ, the cranium, the senses and their dependancies. No sooner have the outlines of the organisms of relation been formed from the external layer, than we find the vascular layer commencing its functions in the production of the peripheric vessels, the venæ cavæ, the aorta and the heart. Up to this period the mucous layer has remained inactive; but immediately that the functions of the vascular layer have terminated those of the mucous layer begin; and we see the intestinal canal, the glands, the lungs, the liver, the pancreas, &c, successively unfold themselves. This order of formation is invariable, and fully bears out the centripetal theory of developments. From this independance of the three germinative layers results also the primitive independance of the three grand systems of organisms to which they give birth. For, suppose all these organisms to be progressing at the same time, how could the confusion and disorder, which their simultaneous presence might occasion, be avoided? Here, then, we find an instance of the sagacity and provision of nature, in allowing these developments to progress but in a stated course and according to invariable laws.

ON THE USE AND ABUSE OF THE STETHOSCOPE.

By CHARLES CLAY, Member of the Royal College of Physicians, London, &c. &c., Lecturer on Medical Jurisprudence, Manchester.

If, when any object of improvement be introduced into the medical profession, that profession would liberally and fairly test its merits, and give the result of their enquiries without prejudice, it is needless to infer that practical medicine would stand on a much better footing than it does at present; but unfortunately our frequent disagreement on the same points, our proneness to condemn too hastily the advances of others, our chagrin at finding a discovery recorded, (on which we had so often nearly tumbled ourselves, and of so simple a nature that we wonder how it could have escaped our notice so long), have a tendency not unfrequently to stamp us with illiberality, so far as to merit the distinctive character of constantly disagreeing with each other. "Doctors differ," being an old adage, but no less a true characteristic, scarcely applicable to any other profession or calling, save that of medicine. In the introduction of any thing new in medicine, there are three classes of individuals to contend with,—first, those who condemn hastily, and without enquiry, all innovations by way of improvement on the beaten track they have so long been accustomed to; over-cautious in admitting, without being convinced, but taking no trouble to be convinced. Secondly, those who are eager to grasp at any new projects without due deliberation, and, therefore, draw premature conclusions on their merits. Thirdly, those who calmly look on, and hear a matter talked about without expressing a thought for or against, for a number of years, at length forced on their notice by the general experience of others, they entertain notions of giving the matter a trial, just when perhaps its use is superseded by some other substitute destined in its turn to share the same condemnation, adoption, or neglect as its predecessor. It is quite obvious, each of these classes furnishes serious obstacles to the improvement of the science of medicine, and it would, indeed, be very lamentable if there were not others in the profession than those enumerated, who are disposed to enquire into new suggestions, with the view of adopting those parts found good, and rejecting the bad, without being in the least prejudicial; thus placing the matter under investigation on its proper basis, so as not to mislead those subsequently engaged in similar enquiries. Without such impartial investigations, it is plain many valuable practical suggestions would be lost to the profession, as well as many worthless subjects pushed into unmerited notoriety, sacrificing the character of the profession with them. Among the many matters of notorious celebrity of late years, the stethoscope is one deserving particular notice, the use of which has become so general and so very fashionable. This instrument was seized on with eagerness by one part of the profession, lauded to the skies as a most correct instrument, having the miraculous power of ascertaining the seat of disease to a hair's breadth; whilst many others were not wanting in summarily condemning it as the most fallacious of instruments, on which not the least reliance could be placed. Others have, as yet, taken little notice of its application, although it has been so long in use. The truth, however, lies with none of these extremes, but with due moderation between them. The greatest omission on the first applications of the stethoscope was, in not stating broadly that it was only applicable *to certain classes of ears* capable of appreciating the sounds elicited; certainly the deaf, or unmusical ears, had no business with it; and yet I have seen practitioners use this instrument with great gravity, although at the same time they were so deaf that it was with no little difficulty they could hear loud conversation. It would be absurd to suppose such persons capable of appreciating the delicate language of the stethoscopic tube. The same applies to an unmusical ear with equal force. I ventured to notice this fact at the meeting of the British Association when assembled in Manchester at the reading of a paper on the use of a stethoscope by Dr. C.J.B. Williams, in illustration of which I mentioned an instance of two expert auscultators arriving at opposite conclusions on the diagnosis of a ease at the same time, and with the same instrument; one of the gentlemen had a very fine musical ear, the other had not, and a subsequent *post-mortem* examination proved the diagnosis of the musical auscultator perfectly correct. Now, when it is considered that a good musical ear is very rare, and equally notorious that not one person in ten exists, but who has some defect in one or both ears, it must follow, that correct auscultators will always be scarce, since it depends, not on the will, but on the natural perfections of the organ of hearing; so much so, that however a person might desire to rival the acuteness of a Laennec, or a Williams, it is out of his power to do so. It must also be remembered, that as yet there is no fixed law for the shape and the material of which a stethoscope should be composed; and, on that score, there is a vast difference in the sounds elicited *from the* same case by *different instruments*, the instrument itself, differing as much in its capabilities of conveying sound, as the fiddle, from the prized Cremona to the children's toy.

The stethoscope is an instrument dependent on the laws of sound, and yet, that it *is strictly so has been denied* by Laennec; but I am convinced, the farther we remove it from the principles of, acoustics, the more imperfect the instrument becomes. It consists of a tube, (varying in its form, dimensions, and also the material of which it is composed,) the use of which is, to convey to the ear of the diagnoser, (by vibration along its substance, or otherwise,) the sounds elicited by the application of its opposite extremity to the part of the individual to be tested. In my humble opinion, this vibration is conveyed chiefly, if not wholly, by the ligneous fibres of the wood of which the instrument is usually composed. Dr. C. J. B. Williams, however, is not of this opinion, but supposes "the chief vibratory communication to be in the enclosed column of air within the tube." *If this were the case*, it would matter little of what the tube was composed. Dr. Williams strengthens his position by maintaining, "that if a small portion of the wood be taken out of the broad end of the stethoscope, it neither improves, nor depreciates the instrument, which it would do if the vibration depended chiefly on the arrangement of the ligneous fibres, many of which would, by that means, be destroyed." On this point I beg to differ with that experienced gentleman, simply because the shape of the stethoscope generally in use does not present to us a continuous ligneous fibre from end to end, and, therefore, a portion may be excised, and the instrument but little, if at all, effected. It is perhaps necessary to illustrate this by diagram.



Now, it is evident, the entire fibrous arrangement of the broad end of the instrument terminates at A. although this figure shews some continuous fibres along the centre; yet such is not the case in the instrument which is cylindrical and trumpet shaped. From this it will also appear, that a piece may be taken out at B., and the capabilities of the tubes (as respects fibrous vibrations) little, if at all, altered.

It is also a well known fact, that some woods make better stethoscopes than others: some prefer one kind, whilst others prefer a different. This shews the difference of appreciation in the ears of the auscultators, which vary exceedingly, and all tend to prove that the fibrous character of the wood employed has much to do with it. If, then, the communication of sounds depends on the fibrous continuation, it is quite clear whilst the instrument is made of wood, we must adopt a straight tube of the same dimensions from end to end, as in a piece of hollow cane, which is perhaps, after all, *as far as wood is concerned*, the best arrangement for a stethoscope; but if we adopt this rule, we are at variance (in some measure) with the laws of acoustics, unless the enclosed column of air is rejected as a communicator of sound. It is in the highest degree necessary that a series of experiments should be instituted, having reference, first, to the material best adapted for the formation of the stethoscope,—second, to the shape, and third, to the manner of its application.

There can be no doubt, but that the correct laws of acoustics apply strictly to the stethoscopic tube, and I am of opinion, that the communication of sounds is effected by the fibrous continuation in those instruments formed of wood, *combined with* effects on the enclosed column of air within. Under these impressions, I believe the best shape to be a cone, as no other form has the power of deflecting sound so perfectly, and so free from confusion; but as this form cannot be obtained out of wood, so as to have continued fibres from end to end, except by reducing the number of the aural end from that of the opposite, by wrapping slips of cane round in a conical form, so it would be better, if it is necessary *to be of wood*, to have the cylinder of equal dimensions throughout, as in a piece of hollow cane, or seek some other material for its construction. I have tried the effect of

stethoscopes formed of other materials than wood, and after very numerous experiments, I have found a perfect cone of glass, or tin, about ten inches long, half an inch in diameter at the aural, and two inches diameter at the opposite end, to form a very powerfully acute conveyor of sounds: next to those substances, a cane tube, a few inches long, of nearly equal dimensious throughout, a mere portion of the common hollow sugar cane, is also an excellent stethoscope. If, then, it is necessary to adhere to the principles of acoustics, (which I maintain to be the correct view,) then we have other materials than wood to assist us in forming a perfect cone, and superior to any other in their capabilities of conveying sound; the best, cheapest, and easiest made, are of tin, or glass. If wood is used, the auscultator must content himself with a second-rate conductor of sound, and of a shape at variance with the strict laws of acoustics. There is one fact deserving of notice, which ought to be applied to the use of the stethoscope, and that is, when a person applies one ear to the outer case of a piano-forte, whilst being played upon, the music is heard louder, but mixed with a confusion of sounds; but if the opposite ear be well stopped with the finger, the air played becomes loud, beautifully distinct, and perfectly free from confusion. I have adopted this plan with the stethoscope, and find when one ear is applied to it, and the other ear stopped with the finger, all the stethoscopic phenomena were much more distinct and very much more free from that confusion of sounds, so often experienced in testing with this instrument; the reason is quite clear—the operator is protected from the liability of mixing surrounding sounds with those of the part intended to be tested, and being so isolated, the attentive and reflective powers of his mind are better capable of forming a just diagnosis, and appreciating to the full, every sound elicited, unmixed with those of the apartment or out of doors. Enough has been said to prove the stethoscope an instrument of great nicety, and capable (with proper application, by long, careful, and attentive cultivation) of effecting much in the discovery of the seat of diseased structure. Its language, however, (for it may justly be called a language, and one often difficult to learn) is so various, differing in every instrument used, and dependeut on so many circumstances, that it is not only imperatively necessary, that a long and careful study of its general principles should be instituted—but that *the very instrument* intended to be used should have a long acquaintance with the auscultator, before he can venture to define a very accurate diagnosis of any diseased structure; and yet, how very often we see persons soliciting the loan of an instrument for temporary use in a single case, when the peculiarities of the stethoscope solicited, are widely different from the one the party is iu the habit of using generally. But the worst view of the application of the stethoscope, is, that it is a fashionable instrument, a very unfavourable position for the development of its principles,which tends greatly to bring it, as well as the employer, into disrepute. How many use it on the principle of custom and fashion? How many apply it to the search of diseased structure, who never dreamt of ascertaining the sounds elicited from the same structures in a healthy state? How many (merely to gain notoriety, to fascinate the patient or their friends into the belief that the operator is deeply skilled in the mysteries of auscultation) use it, when, in fact, they scarcely knows one sound from another, from uatural defects in the organ of hearing, or are wanting in the opportunities to cultivate its principles properly. In the present day, the rage for auscultation and percussion is to such an extent, even among invalids, that they crowd to the practitioner who makes the greatest shew of grave manipulations with the stethoscope, hammer, and pleximeter, and provided they are ear-trumpetted, and well thumped here and there, they feel perfectly satisfied of his skill and ability, whilst it is evident those who apply it for no worthier motives than these, may have their ears pretty close to the patient and assume a gravity that would test the risible faculties of any bye-stander, and yet his eyes, ears, and understanding (if he have any) are eugaged at the very moment with objects very different and far removed from the case he pretends to test. I think there is nothing so certain as that an ear capable of appreciating delicate sounds (as a musical ear) is positively necessary for a stethoscopist; such must have considerable advantages over those wanting an ear for music, and it would redound much more to the honour of such gentlemen who have not a discriminating ear, to lay the instrument aside and form their judgment on grounds more within their comprehension. As I have already said, it takes a considerable time, an almost undivided attention, and extensive opportunities, to be a good auscultator, even with every advantage of a good ear and an earnest and reflective mind. Good auscultators will always be scarce, but confine the stethescope to those, and we shall not observe so many curious cases recorded iu our journals, some of which I could refer to, that, though the world may laugh at them,an enlightened profession should rather grieve at such displays of ignorance by those who would be thought something out of the common way, (and certainly they are nondescripts) imagining themselves a Laennec or a Williams, coining new terms, misapplying old ones, and clothing a case in language which neither they,nor any one else, understand. Speaking of the stethoscope, Mr. Ramsbotham says, "In the hands of a gentleman long accustomed to the different sounds conveyed to the ear through that instrument, it may possibly answer an accurate purpose; but I should be very sorry to trust to its use on an important occasion, in those *of the generality* of medical practitioners. Correctuess of judgment on this point requires a degree of tact not easily acquired." It would be very desirable if after some extensive experiments some well constructed instrument could be fixed upon, and generally used, and also when recording stethoscopic cases, to state the kind of instrument used. It would also be as well to simulate each other's terms, and be not perpetually on the rack to invent new ones, and those of the most mysterious instead of the simplest construction and meaning. Much may and can be done with the stethoscope if applied legitimately; let us hope for the credit of the profession that healthy sounds will form a subject of inquiry in order to give a better idea of diseased structure; let us hope the stethoscope will henceforth be used not for fashion's sake but for useful purposes.

ON THE REFLEX-FUNCTION.

The following are Extracts from an Abstract of Dr. J. W. Arnold's German Work "On the Theory of the Reflex-Functions, as given in the Medico-Chirurgical Review for January last.

(Continued from p. 56.)

The excito-motor system.

As M. Hall himself has declined to demonstrate anatomically his excito-motory system, nay as he even confesses his inability to do so, the author finds it unnecessary to trouble himself with showing the impossibility of the existence of such a system by the known structure of the spinal chord. He therefore conteuts himself with examining the experiments of M. Hall in support of his theory. From experiments in which the so-called reflex-motions occurred in decapitated animals, and in which, after irritating the spinal marrow, motions, as well of the upper as of the lower extremities, ensued, M. Hall draws the conclusion, that the nervous action, contrary to the views of Haller and others, follows other directions, besides those of the nervous twigs and nervous fibres, directions which are incident, and reflected with respect to the spinal marrow. According to this course of the nervous power M. Hall considers that there exist certain nerves which are also incident and reflecting. These experiments of his prove nothing further, according to our author, than that the spinal marrow and medulla oblongata have a sensibility for irritants, which act immediately on the same, that these irritants are capable of throwing this into a condition which, being transferred to nerves of motion, dispose these to excite motions; further, that the irritants which affect the sensitive nerves belonging to the spinal marrow, in like manner occasion, in this central portion of the nervous system, a state which is followed by motions. These facts, and the immediate conclusion to be drawn from them, are long known to physiologists: only the consequences which M. Hall considers himself warranted in drawing are new and also unfounded. The author is of opinion that all the experiments of this physiologist, taken together, do not contain a single fact which can fairly be deemed a proof of the existence of an excito-motory nervous system, and that the admission of such a system is not supported by any other kind of physiological proofs, and that it cannot, as M. Hall confesses, be demonstrated anatomically, and therefore that we are perfectly warranted in rejecting the theory of an excito-motory nervous system, as a system destitute of all experimental and truly rational grounds. Having thus disposed of the substauce or essence of the system, our author thinks it unnecessary to treat of the consequences deduced from it; he merely proceeds to direct attention to some errors and contradictions involved in the theory. With respect to the distinction of the nerves on the one hand into sensitive and excitory, and on the other hand into such as serve for voluntary motion, aud into reflecting, he now calls attention to some points in order to demoustrate the groundlessness and untenability of this division. When we consider the following facts, we shall feel disposed, says M. Arnold, to admit against M. Hall, that both processes, sensation and susceptibility of excitation on the one side, as well as voluntary motions and reflex-motions on the other, are effected by the same nerves.

1st. The skin, the organ from which sensations attain consciousness in so high a degree, which, as an organ of feeling, is the medium of so many sensations, is also the organ, whose irritations call forth the so-called reflex motions, more than those of most other organs, more for instance than those of the muscles. It is accordingly here the organ through which conscious sensations are chiefly communicated, and that also through which the reflex-motions chiefly receive their excitations. The nerves, which go to the skin, are accordingly sensitive and excitory nerves.

2nd. In admitting special sensitive and excitory nerves, a general expansion of both nerves even to the most minute ramifications must be allowed to exist in the skin, every the smallest portion of which possesses sensibility and a power of excitation. For as no portion of the skin, however small, can be touched with the finest point of a needle, which does not excite sensation, and at the same time the so-called reflex motions in decapitated frogs, it must be admitted, as Volkmann has well observed, that every part of the skin of the size of a needle's point contains two specifically different nervous fibres, and to every muscular fibre which is subservient to voluntary and the so-called reflex motion, there belongs besides a cerebral fibre, also a spinal fibre.

3rd. After dividing the posterior roots of the nerves given to the posterior extremities, the animals not only lose sensibility in these parts, so that no indications of pain are observed on sticking or pinching the same, but also on irritating them none of the so-called reflex-motions follow, nor on the application of nux vomica, does tetauus take place; whilst, after touching those parts whose sensitive nervous fibres were not divided, this state immediately took place. This our author proved by experiments. He laid bare the under part of the spinal marrow in a lively frog, and then divided the posterior roots of the nerves distributed to the hinder extremities. These extremities could now be pinched and pricked without the animal evincing any sign of pain. He then applied from eight to ten drops of the solution of the extract of nux vomica by means of a hair-pencil to the mucous membrane of the mouth and the cavity of the throat. Six minutes after, tetanus came on; it was more decided in the anterior than posterior extremities; and in the latter a tetanic twitchiug set in, in accordance with the anterior limbs, which, however, was quickly followed by relaxation, whilst the tetanus held on in the parts provided with sensitive nerves, which difference was observed to exist in every new case. The hinder extremities were insensible, with the exception of the inner surface of the left thigh. Irritation applied

to this part was followed by tetanic spasms, whilst the hinder extremities could be irritated and pinched without tetanus being occasioned. The spinal marrow was now divided in the middle of the seventh vertebra, reckoned from below; in the parts anterior to the division the tetanus continued, but the hinder extremities were relaxed; only when the interior surface of the left thigh was touched, tetanic twitches were observed. He now divided the still uninjured sensitive nervous fibres on the left side, after which all sensation was lost in the posterior extremities, and no trace of a tetanic spasm could be observed. A repetition of this experiment was followed by the same result.

4. Nux vomica exalts so very much the power of sensation, and increases also the susceptibility to irritants after the removal of the head, that M. Hall numbers it among the poisons which produce an excess of reflex-function. This fact renders it so much the more probable, that sensation and susceptibility to excitation are not effected by different nerves and parts of the nervous system, more especially if the following points be kept in view.

A. After removing the head or brain the susceptibility to excitation still exists, and nux vomica also is still capable of producing exalted irritability and rigid spasm, a result very striking in amphibious animals. M. Arnold opened in a frog the cavity of the head as well as the upper part of the spinal marrow, and divided the medulla oblongata at its upper extremity, so that it was perfectly separated from the brain. After some minutes the vital phenomena were again re-established, and five minutes after the division the motions of irritation were plain to be seen. Now some extract of nux vomica with water was introduced under the skin on the lower part of the back. The consequence was that, after five minutes, tetanus set in in a very severe degree. From this and other experiments attended with the same results, the conclusion may be drawn that removal of the brain does not stop the action of nux vomica on the nervous system, and that, after complete separation of the brain from the medulla oblongata, the action of this poison shews itself in parts which are connected with the medulla oblongata and spinal marrow, and under its influence. Accordingly these parts of the spinal marrow are capable of being thrown into a peculiar state and condition by an irritant, which possesses a specific local action on them, independently of the brain, just as after the removal of the head they produce self-dependent and determinate motions after the action of stimuli.

B. After injuring or partially removing the medulla oblongata the so-called reflex motions are weaker and of less duration, than after mere decapitation of the animals. The same thing occurs with respect to the action of nux vomica. Our author's experiments on frogs gave in general the following results in this respect.

a. Removal of one lateral half of the medulla oblongata does not suspend susceptibility to the action of nux vomica, if the process be carefully conducted. The action is merely of less duration.

b. Cutting off a small portion at the upper extremity of the medulla oblongata does not prevent the occurrence of the exalted irritability of the skin and of the tetanic spasms; it merely seems to delay their occurrence, and to be the cause of these phenomena, being less permanent in the experiment in question, and also of their being less marked in the hinder extremities.

c. After the division of the medulla oblongata transversely, the tetanic spasms either do not come on at all, or but very slightly and feebly.

C. After removing the medulla oblongata, the reflex motions diminish more palpably in energy and duration than after their mere lesion. This is also the case with tetanus occasioned by the application of nux vomica before cutting out the medulla oblongata.

D. The medulla oblongata through which the sensations, at least of very many parts of the body, are effected, is the great point of the nervous action of nux vomica, which increases the power of sensation in so high a degree, and also, as the reflex physiologists themselves admit, increases the susceptibility to excitation. After opening the upper part of the spinal canal in a sprightly frog, M. Arnold made, with a sharp knife, a transverse cut immediately behind the lesser brain, and a second one immediately above the origin of the nerves going to the anterior extremities. The portion of spinal marrow lying between the two cuts with the medulla oblongata was taken out and removed from the canal. In the head and in the anterior extremities all the motions of irritation were instantaneously abolished; on the contrary, they were tolerably active in the posterior limbs, and were also excited by touching the posterior part of the trunk; the hind-legs were strongly drawn up, and could not be extended without some trouble. The nux vomica was applied rather plentifully, about a grain and a half of the extract mixed with water, partly beneath the skin on the back, and partly on the outer skin. Fifteen minutes later no tetanic spasms had as yet appeared, but the motions of irritation began to decrease. After seventeen minutes the motions of irritation were only very weak, but no convulsive twitches could be perceived. In general such effects did not follow.

From these experiments, as well as from the circumstance that the tetanus occasioned by the application of the nux vomica still continues if the medulla oblongata is not removed till after the action has set in, the following conclusion may be drawn; that the spinal marrow is not active from its own intrinsic powers, and that it re-acts only so far as it is charged from the medulla oblongata, and according to the manner in which this charging has taken place. One might then consider the so-called reflex-motions still continuing after the removal of the medulla oblongata, as charges of the nervous fluid accumulated from the spinal marrow previously transferred from the medulla oblongata. This view however is but partially correct; for, besides the structure of the spinal marrow and so many physiological grounds, it is opposed by the circumstance, that certain agents still act on it after the medulla oblongata has been removed; strychnine, for instance, is still capable of exciting rigid spasm under favorable circumstances.

Muller does not express himself very definitively, regarding what takes place in the spinal marrow in the reflex-motion. According to his view an irritation of a sensorial spinal nerve next causes a centripetal action of the nervous principle to the spinal marrow. If this can reach the *sensorium commune*, a conscious sensation is produced. But if it does not reach the *sensorium commune* in consequence of a division of the spinal marrow, it still retains its entire power as a centripetal action of a sensorial nerve to produce a reflex motion. In the first case the centripetal action would be at the same time a sensation, in the latter case not, but it is sufficient for the reflex-motion or for the centrifugal reflexion. But we are not here told in what way the centripetal action, which does not reach to a conscious sensation, brings about a centrifugal reflexion, and wherein the process effecting this in the spinal marrow differs from that in the brain in the motions attended by conscious sensations. From more than one passage in Muller it appears that he assumes in the spinal marrow a mechanical transference of the nervous fluid from the nerves of sensation to those of motion. This assumption however is contradicted, not only by all the facts above adduced to disprove the isolated conducting property of the nervous fibres in the spinal chord, but also by the experiments which show that the motions of irritation of decapitated animals evince the character of determinateness and harmonious accordance.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Friday, April 21, 1843:—

C. E. Hatherly, F. Manning, G. P. H. Milsom, A. W. Gabb, S. Curtis, R. H. Bradley, J. Williams, T. Pollard, E. Dewes, W. Pollard, W. Millington, C. Scaife, T. Slater.

ETHNOLOGICAL SOCIETY, APRIL 18.

THE meeting was occupied in hearing part the second of a paper entitled "contributions towards a History of the Esquimaux, by Richard King, M.D." Mr. Greenough presided, supported by Sir Duncan Macdougall, Admiral Sir Charles Malcolm, and Doctors A. Todd Thomson, Hodgkin, Clendinning, Burton, and Holt Yates. The author drew a comparison of the results of his own researches with those of Herder and Prichard, wherein it appeared that the latter were replete with error. After making the Esquimaux dwarfs, Herder remarks that what the vital power could not bestow in aspiring height, it has compensated in warm and tough thickness; the blood circulates more slowly; the heart beats more languidly, yet there is such an abundance of fat and warming fatness as to render their very breath suffocatingly hot. The mother suckles her infant for a long time with all the profound tenacious affection of animal maternity. Vegetable food is prone to internal putrefaction in their stomachs, and finally they are often obliged to support themselves in their caves by sucking their own blood. Dr. Prichard has not gone as far as Herder, the absurdity of whose account must be apparent to the most transient observer, but he is no less at fault both in a physical and physiological point of view. In answer to a question from the president, the author stated that on a future occasion he should read a paper on the intellectual character of this variety of mankind, wherein he should point out further errors in the works of the authors mentioned. After entering into a minute account of the dwellings of the Esquimaux in the various parts of the circumpolar territory which they occupy as well as differences depending on the season of the year (these differences being either of a permanent or a temporary character) the author observed both have their advantages, the permanent during extreme cold, when noxious and offensive vapours are kept down by frost, the temporary when the summer thaw lets loose these destructive agents. Where civilised man takes his stand the land is too valuable to enable him to pursue such a course, and, therefore, he effects his purpose by a well-constructed drainage. He who has reflected upon the drainage of cities cannot but regret the loss of that vast mine of wealth which is thus annually swallowed up by the ocean, and he who is able to devise some means of saving the valuable commodity without rendering it offensive and unsightly, will confer a lasting and inestimable benefit upon his country. A very spirited conversation followed the reading of the paper in which Dr. A. Todd Thomson, Dr. Hodgkin, Mr. Greenough, Mr. St. John and Mr. Ramsay took a leading part.

SECALE CORNUTUM.—It was observed in America that children were often still-born after the exhibition of ergot of rye, and this led many practitioners in that country to discontinue its use altogether. The same circumcumstance has likewise been noticed in this country, and it is not difficult to explain the cause. The contractions of the uterus excited by the ergot of rye, are different from those of natural labour, they are of much greater strength, and of longer duration, like a number of violent labour pains continued into one another without intervals. The long interruption to the circulation of the maternal blood in the uterus and placenta, which must take place during these lengthened contractions, and the want of the necessary changes in the fœtal blood, will explain why children are often born in a state of asphyxia, after the administration of the secale cornutum.

UREA SECRETED BY THE PERITONEUM.—Professor Kane, of Dublin, has detected urea in large quantity in the fluid drawn by tapping from the abdomen of a woman affected with ascites, combined with symptoms of Bright's disease of the kidneys.

TO CORRESPONDENTS.

House of Commons Business.—*Mr. Macaulay's question on the Poor Law had reference* only *to the exclusion of Scotch and Irish practitioners from offices under the recent Poor Law regulations. Sir James Graham's reply was, that this particular grievance he would remedy this session, if necessary, even by a special law for the purpose. This explanation of our parliamentary report in another column will prevent misconception, and shew that the question of inadequate remuneration remains in stutu quo*—i. e. *calls for as much strenuous exertion as ever. We may here add that Sir James Graham expressed a very confident opinion, that his new bill on medical reform would pass into law this session. This should be carefully borne in mind.*

B. Coleraine *is thanked, The time named will do extremely well.*

Argus, of Liverpool, *enquires what Mr. Macpherson Adams is about, and expresses some curiosity about further revelations in reference to Calixte, Virginie, and the experiments exhibited by Mr. Prideaux. He thinks that a hint is all that is necessary to bring him into action. As an authority known to us, and of unimpeached honour, we for our part, can offer no objection to the continuance of his papers.*

Corvenius *sends us the following* "Query to Nosologists:—Is not the erythema anatomicum, erysipelas phlegmonodes, phyma-anthrax or carbuncle, and a disease named p. 56 Medical Times, for April 22d, 1843, "the pseudo-erysipelas subtendinosum colli Ludwigii," one and the same disease? The violent pain in the cellular part affected—the quagmire fluctuation—the horrid stench of its contents—its extensive sloughings or death, are common to all the above diseases:—Should they not be called under some one common name?"

Typhus Fever.—*There is no truth in the assertion of a new epidemic being abroad in London, but typhus fever is more than usually prevalent. The deaths during the week ending 15th April, were twenty more than for any week (taking the average) during the preceding five springs. By a singular coincidence the deaths by consumption are about* 40 *less.*

To Physicians.—*We are told by a correspondent that a fine opening presents itself for an intelligent, active physician, of middle age, and moderate independence, by the just announced retirement, on account of illness, of the only practicing physician in High Wycombe, and its extensive neighbourhood. We are thankful for the information on the part of one of the many gentlemen whom this announcement will set in motion.*

Medico-Legal Trial.—*We have been sent the report of the trial, at Liverpool, of Mary Hunter, for poisoning her husband with arsenic. The design of the criminal deed—the purchase of the poison—the symptoms shewn by the deceased before his death, and a number of other strong circumstances, proved the prisoner's criminality. One thing only was wanting: the sickness took place on Saturday—the man died on Monday, and on the post mortem examination on Tuesday evening, no trace of poison was discoverable, though the investigation was conducted, among others, by a chemical lecturer of some name, Mr. Davies, of Manchester. The judge, on the expression of a doubt as to whether the arsenic, if taken, could so quickly and completely have become eliminated from the body, stopped the case, and the prisoner was acquitted.*

A Subscriber.—*If the measures already taken have failed through no fault of the patient, the plan should be changed, and bals. copaib. and tinct. ferri muriat. in confection should be administered. With due attention, we have never seen this fail in gleets of the longest standing.*

M. R.C.S.—Ptolemy—An Observer—Dr. R. D.—Mr. T. H. P.—*declined.*

We have to acknowledge the receipt of several communications.

X. Y. Z. *is right*—"The Minor" *carries a lie on its very face. The declaration of Dr. H. Green's editorship is in the teeth of facts, and above all, in the teeth of that writer's own affirmations in public and private, who discontinued his labours on the unmistakeable plea, that he had "done" them too long for nothing. He is succeeded, our correspondent tells us, by one who has a humbler and juster appreciation of the value of his exertions, a "Dr. Frederick Something, who, his hospital footmanship proving profitless, has betaken himself to this equally hopeless mode of raising the wind." Will our correspondent tell us who "Dr. Frederick* Something" *is? We should as soon know the gentleman by the name of "Dr. Frederick Nothing."*

THE MEDICAL TIMES.

Saturday, April 29, 1843.

——— O, Cœca nocentum
Consilium!

A very important document, throwing great light on the working of the New Poor Law on the interests of medical men, has just been issued by the House of Commons. We shall give a few of the more remarkable facts which it details.

There are, in England and Wales, nine districts, under as many assistant Poor-Law Commissioners. The districts comprise parishes varying from 51 to 77—making between the nine 587, or an average for each of 66. Their total population is 13,762,353, their *workhouse* paupers (actually relieved) 151,582.

The number of medical men employed is 2,425, between whom £139,784 is annually divided; a sum which allows each medical officer, for every patient he may be called to attend in the year, at the rate of 2½d. according to Mr. Edwin Chadwick, or at the rate of something more than 2¼d., according to Mr. Cocker. The sum per person allowed, varies singularly with the different assistant Commissioners — and sometimes varies very wonderfully under even the same functionary. The gentleman under whom the highest rate (5d.) is given, is Mr. Parker, who presides over Berks, Bucks, Dorset, Gloucester, Southampton, Surrey, Sussex, and Wilts. The gentleman who has the distinction of being the supervisor under whom medical men are the least paid (1¼. according to Mr. Chadwick, or 1d. and less than ⅛d., according to Cocker, being £11,510 between 2,655,314) is Mr. Clements, who has under him, Chester, Derby, Lancaster, and the East and West Riding of York. The lowest rate paid in any Union is at Glossop, where one medical man, with a population of 14,575, and, after a liberal increase of salary of £5, receives £20 per annum—¼d. per head! The northern counties, and the extreme western, as Cornwall and Devon, are the *least*, the southern counties (including the honourable exception of Dorset) the *most* liberal. Middlesex, setting a bad example, is, of all the immediately surrounding counties, the most parsimonious. The rate varies in it from ¾d. to 3d. The following are the Unions:—

	Population.	Med.Off.	Agg.money paid. £.
Bethnal-Green........	74,087 ..	3 ..	253
Brentford............	37,054 ..	7 ..	386
Chelsea, St. Luke's	40,177 ..	3 ..	237
Edmonton	52,569 ..	8 ..	655
St. George in the East	41,351 ..	2 ..	175!
Hackney	42,274 ..	4 ..	360
Hendon	15,444 ..	5 ..	304
Holborn	39,720 ..	3 ..	300
Kensington	74,775 ..	7 ..	581
London, City of	55,967 ..	5 ..	525
London, East	39,665 ..	3 ..	300
London, West	33,629 ..	2 ..	250
St. Martin in the Fields	25,195 ..	2 ..	300
Poplar	31,091 ..	3 ..	300
Staines	13,216 ..	4 ..	210
Stepney	90,657 ..	5 ..	416
Strand	43,894 ..	3 ..	368
Uxbridge	18,889 ..	3 ..	210
Whitechapel	71,758 ..	3 ..	468

This exposes a lamentable state of things, and we cannot be certain that, in lamenting the facts here exhibited, we have them presented to us in all their hideous reality. In reference to Stepney, we have good authority for the assertion that the Commissioners have exaggerated more than fourfold the real receipts of the medical men: £1,901 is the sum named as divided among the five medical men—and we believe we may assert with confidence, that the whole amount does not exceed £416, the sum we have above given. Throughout, indeed, the whole document, a very unfair system is pursued, of including minor fractional parts in the next higher quadruple part, by which the Commissioners assume, on nearly every calculation, the credit of giving one-eighth, one-seventh, or one-fifth of a penny per head, more than their own given figures obviously entitle them to. This is no slight mistake, when it is remembered that the omission, however small in the single instance, is of the utmost consequence when multiplied by thirteen millions, the number of the population that is in question.

Warning our readers of this fractional *dishonesty*, we give the rate of remuneration given by a few districts. We opine that their medical men are not disqualified for the discharge of their duties by any unwieldy amount of obesity. Paying one farthing per head, we have Glossop, Todmorden in Lancashire, and Easington in Durham. Paying one halfpenny per head, we have Bury, Lancashire, Salford, Bradford, West Derby, Keighley (Mr. Ferrand's abode), Carlisle, Durham (the most of these are under Mr. *Hawley*), Cheltenham, Dudley, Caxland and Arrington, Derby, Stoke on Trent. Paying three farthings per head, we have Stockport, (Mr. Cobden's residence) Bolton, Chorlton, Lancaster, Manchester, Huddersfield, Merthyr-Tydvill, (seat of the riots) Ashton with Garrigill, Cumberland, Auckland, Chester-le-Street, Lanchester, Sunderland, Bellingham, Hexham, Morpeth, York, Chepstow, Madely, *Salop*, West Bromwich, Wolverhampton, Penzance, Redruth, Medway, Radford. So that, out of 587 Unions, we have actually 39 Boards of Guardians, after their own confession, paying, in as many Unions, less than three farthings per head on the population, for medical attendance!

Besides these, we have from 140 to 160 Unions, where the rate per head allowed is generally 1d. per head, and never reaches to twopence. With such an arithmetical state of facts, appeals to reason or to justice are needless. Common sense at once sees that, when the injury to medical men is so enormous, there is something more than wrong to them in question. It must extend to the whole pauper population. The

breach of equity committed involves as much danger, as well as responsibility, to those perpetrating, as mischief to those suffering it.

ON COMPETITION IN THE DRUG TRADE.

One of the most difficult and intricate subjects which it comes within our province to discuss, is the regulation of the prices of drugs, and the remuneration for labour in their preparation. This is not merely a mercantile question; it affects the credit of our profession no less than it does the pecuniary interest of our members, for while it may be considered an axiom, that a certain amount of competition is essential to the good of the public, it is no less true, that a business which does not realize a living profit cannot be respectably conducted.

Those who patronise cheap shops in purchasing the ordinary necessaries of life, such as food, clothing, furniture, &c., have no reason to complain if the flavour of one commodity, or the durability of another, should be found defective; and on these points the public is enabled to form an opinion from experience with some degree of accuracy, and thus to decide respecting the policy of purchasing articles for less than their apparent value. In the case of medicine, however, the decision is much more difficult. The purity of many articles cannot be estimated by their obvious or sensible qualities; the use of chemical tests is not understood at all by the public, and imperfectly even by the profession; nor is the apparent effect of a remedy in any particular case an infallible criterion of its worth. A good medicine, injudiciously administered, may produce an unfavourable result; and, on the other hand, a patient may obtain relief, or recover by an effort of nature, after taking what was almost, if not entirely, inert.

Another difficulty which exists in determining the actual value of each particular medicine, proceeds from the price being, in many cases, affected more by the amount of labour required in its preparation than by its original cost; which occasions a confusion in the calculation between the items of *labour* and *profit*.

According to Adam Smith, "the price of a thing, in most cases, consists of three distinct elements—the wages of the labour, the profit of the master who directs the labour; and the rent of the ground," &c He proceeds to state that, "if the one species of labour should be more severe than the other, some allowance will naturally be made for this superior hardship: and the produce of one hour's labour in the one way, may frequently exchange for that of two hours labour in the other; or if the one species of labour requires an uncommon degree of dexterity and ingenuity, the esteem which men have for such talents will naturally give a value to their produce, superior to what would be due to the time employed about it. Such talents can seldom be acquired, but in consequence of long application, and the superior value of their produce may frequently be no more than a reasonable compensation for the time and labour which must be spent in acquiring them."

These observations are applicable in an especial manner to pharmaceutical preparations, which are the result of processes more or less tedious and laborious, and which, from the difficulty of estimating their efficiency by their appearance, and other obvious properties, often derive their value from the reputation of the maker, or, in other words, from the estimated value of his time and labour. Thus the sulphate of quinine of one manufacturer may produce in the market 10 per cent. more than that of another, and probably 15 per cent. more than the same article prepared by a person whose name in unknown. In the case of some delicate preparations, as, for instance, morphia, strychnia, aconitina, &c., the variation in the market value may be much greater; while in other articles requiring less talent and experience in their production, or possessing physical characters more readily distinguished, the variation in value is comparatively trifling. In all cases, however, the price at which an article is sold should be sufficient to pay the natural rates of wages, profit, and rent. This is what Adam Smith calls its "natural price;" and he states, that "the commodity is then sold precisely for what it is worth, or for what it really costs the person who brings it to market: for though, in common language, what is called the prime cost of any commodity does not comprehend the profit of the person who is to sell it again; yet if he sells it at a price which does not allow him the ordinary rate of profit in his neighbourhood, he is evidently a loser by the trade; since, by employing his stock in some other way, he might have made that profit. His profit besides is his revenue, the proper fund of his subsistence.

When the amount received by the manufacturer exceeds that which is here termed the *natural price* of his goods, the circumstance may be supposed to arise from one of two causes; either that the supply of the article in the market being inadequate to meet the demand, some purchasers are willing to give more than the ordinary value or that the skill and reputation of the manufacturer enables him to obtain a higher rate of remuneration for his time and labour. The sale of commodities below their *natural price*, may proceed from excess of competition, a temporary glut in the market, want of confidence in the vendor, or an erroneous method of calculating the cost.

The first of these extremes, namely, the sale of commodities above the natural price, is generally kept within due bounds by the influence of competition, for although the public will readily pay for fashion and prejudice to a certain extent, a re-action almost invariably takes place when the rate of charge is found to approach to what is termed, in common language, "an imposition." In the case of a monopoly, where an individual, or a company of individuals, obtains the entire control over a commodity, the interest of the public must inevitably suffer. For instance, if one person buys up all the mercury which the mines produce, "the trade" has no alternative but to pay whatever he demands, and to charge in proportion. Again, the inventor of any particular process retains absolute control over the rate of profit which he demands, so long as the article in question is in request, and the method of preparing it is known only to himself. These cases of monopoly are comparatively rare, and are generally limited in their duration.

The sale of articles below the natural price is much more common, and although this might, at first sight, appear to be a public advantage, the indirect tendency of the practice is no less injurious than the opposite extreme. The primary effect of competition is a reduction of prices, as every merchant or vendor of a commodity finds it necessary to reduce his profits to meet the state of the market, and when there are many persons anxious to sell, each endeavours to secure to himself a preference by offering the greatest possible advantage to his customers. So long as this is done without violating the correct principles of fair remuneration, the public derive benefit from the competition. But it often happens, that in individual transactions general principles are overlooked, and the causes which lead to this result require to be considered more in detail. It is obvious that the inducement to embark in any particular line of business is in proportion to the existing demand for the commodity in question, and that so long as this demand continues to increase, the number of aspirants to a share of the profits increases likewise. Nor does competition stop at this point, as the success of one man in any department, frequently induces a hundred to follow in his wake, each hoping to derive the same benefit. A reaction is the inevitable consequence. The market is overstocked, and the profit being divided among a larger number of persons than it is calculated to support, a variety of expedients are resorted to by each individual for the purpose of gaining an advantage over the rest. A prominent feature in this struggle is a reduction in prices, and this is often carried to an extent which involves the parties in heavy loss or absolute ruin. Many sacrifices are made by merchants, in cases of emergency, when a disappointment in the sale of goods places their credit in jeopardy, and pressing demands for ready money oblige them to sell at any price which happens to be offered.—These occurrences impair the stability of the market; purchasers take advantage of the necessities of vendors, who follow the example of each other until the calculations of profit on the principles of fair remuneration are forgotten in the eagerness to do business on any terms. Sometimes the competition between two or three individuals is carried to such an extent, that the ultimate result is dependent on the length of their respective purses; those who have the smallest capital being ruined, while the successful competitor finds himself, with reduced capital, master of a trade which no longer affords a living profit.

Another very serious result of excessive competition is a deterioration in the quality of commodities. When the market prices of a genuine article is reduced so low as not to afford a living profit, the vendor or manufacturer is driven to an extremity which induces him to resort to a variety of expedients for remunerating himself. The first and most natural consequence of this state of things, is, that less care is bestowed on the manufacture or purification of the article, and any part of the process which involves expenses, and which can by possibility be dispensed with, is discarded. The object in view is the amount, more than the quality, of the product, which, even if genuine, is no longer so fine as it ought to be. In the case of simple drugs in which everything depends upon the selection, or the separation of the various qualities, this is in a great measure neglected when a remunerating price cannot be obtained.

But if often happens that even this amount of economy or negligence is found ineffectual in securing an adequate profit, and the next step is a systematic adulteration, or the substitution of one article for another. It is needless to enumerate instances in which the practice is resorted to; the facts of the case are unfortunately too well authenticated, and since the main object and inducement for carrying on business is profit, it is not unfair to doubt the honesty of a transaction in which the vendor, if honest, must obviously sustain loss to any considerable extent. It may happen, it is true, that the market is overstocked with some particular article, and that all who hold it in any quantity being in the same predicament, are obliged to meet the emergency by making a sacrifice; but in ordinary cases when a product, such as an essential oil, or a medicinal preparation, is offered at a price very much below the cost at which it can be imported or produced, we may suspect that it is either sophisticated or of inferior quality.

As a result of excessive competition in the drug trade, we may notice the *ad captandum price lists* which are occasionally circulated, in which the prices quoted are tempting only to those who are ignorant of the real value of the articles. And here we allude, not to those lists in which drugs of the first, second, and third quality are described with their respective prices, but to those which contain but one price attached to each article, and that price quite disproportionate with its market value, if genuine and sound. It is obvious that great injury is done to the wholesale trade by those who issue such lists; as the inevitable result is that the retailer is led to form erroneous ideas on the subject, and is therefore with difficulty persuaded to give a fair price for his stock.

It is, therefore, evident, that although a certain amount of competition is beneficial to the public, by acting as a check upon monopoly and extortion, yet when carried to this extent it becomes a public evil, by deteriorating the quality of commodities; and while the consumer suffers this inconvenience as the inevitable result of unnaturally low prices, the members of the trade gain nothing by "cutting each other's throats," In the case of articles of luxury, a reduction of price often increases consumption to such an extent as to compensate by the amount of business for the diminution of profit on each transaction; but this cannot be said to apply in the same degree to the traffic in drugs, as few persons would take a double dose of medicine because it happened to be reduced to half the price.—*Pharmaceutical Journal.*

ON THE PREPARATION OF CYANIDE OF POTASSIUM AND OF EXTEMPORANEOUS PRUSSIC ACID,

By PROFESSOR DONOVAN, of Dublin.

Of all known poisons, pure prussic acid proves the most suddenly mortal. A particle of it applied to the tongue of a vigorous dog, caused him to fall down dead, after two or three deep inspirations; and a single drop being injected into the jugular vein of another dog, he fell dead, as if struck by lightning (*An. de Chim. et de Phys.*, vi., 349). M. Scharinger, of Vienna, having accidentally spilled a little on his arm, died in a few hours in the greatest agonies (Phil. Mag., xlv., 76). Nay, smelling it is said to have produced death; and even breathing air impregnated with its vapour, occasions much inconvenience (Magendie). It is also destructive to vegetables.

Prussic acid, in the state of concentration that manifests such tremendous energy, is unmanageable as a medicine, perishable in constitution, and liable to continual and rapid variation of strength. To remedy these defects to a certain extent, dilution alone is sufficient, for in that state it suffers comparatively little alteration during a long time. Gradually, however, it loses its power, although sufficient remains unaltered to communicate its peculiar smell. I have seen in the laboratory of Trinity College, Dublin, medicinal prussic acid prepared seventeen years since, by Dr. Barker, which still retains its odour.

The prussic acid sold as medicinal, varies fearfully in strength, owing to original differences in the degree of dilution, and other causes. It has been found in the London shops to vary, in the quantity of anhydrous acid contained in it, from 1.4 per cent. to 5.8; and Dr. Fyfe found it to vary in Edinburgh from 1 to 4 (Christison's Dispens., *see also* Magendie's Formulary, translated by Dr. Gully, page 85.) There are many sources of uncertainty in the constitution of the medicinal acid. The rapidity of the distillation; the difference of temperature at which the condensation of the vapour has been effected; the length of the condensing tube; the dryness of the cyanide of mercury (P.D), and the strength of the muriatic acid made use of to decompose it; the age of the acid produced; the care with which it has been preserved from light, air, and evaporation, are all causes which influence its strength.

The following are the opinions of two competent judges, M. M. Robiquet and Villermé: "Its extreme volatility, and the great facility with which its elements separate, are causes which render its mode of action unequal and uncertain. Of the numerous processes which have been proposed for obtaining it, none of them obviate this inconvenience. It has been supposed that prussic acid, prepared by the decomposition of ferro-prussiate of potash by sulphuric acid, keeps longer than if it were prepared otherwise; but that difference holds good only with regard to a different degree of concentration. Whatever process is employed, prussic acid will always alter in the same manner when diluted with the same quantity of water, and that alteration will be rapid in proportion to the degree of concentration." (*Journal de Physiologie. par Magendie*, iii., 224).

(After showing that none of the customary modes of preparation can be depended on for attaining constancy of composition, Dr. D. proceeds:)—The process of Robiquet has, since its first promulgation, been modified in a manner apparently trivial, but the results of the modification are in the highest degree important. The improvement consists merely in the application of a higher temperature, and the continuance of it for a greater length of time; it is detailed in the Codex Francais, 1837, as follows:—"Reduce protocyanuret of potassium and iron to coarse powder, half fill a retort with it, place the retort in a good reverberatory furnace, adapt a tube to collect the gas, heat moderately to expel the water of crystallization, then raise the temperature to the fusion of the matter, which will be announced by a disengagement of gas; support the temperature so that the disengagement will be regular and moderate; increase progressively the heat, and maintain it at a very high degree for a quarter of an hour, close the extremity of the tube, close also the apertures of the furnace, and leave the whole to cool. Then break the retort, carefully detach the upper stratum, which forms a kind of well-fused enamel. This is the pure cyanide of potassium. Include it in a well-ground stopper-bottle. Remove afterwards the spongy black mass which is found in the lower part; include it also in bottles. The dose of this black cyanide is more difficult to regulate."

It may be added, that the black cyanide is totally unfit for medical use.

The chief difference between this and the original process of Robiquet is the more perfect fusion of the salt, the consequent complete subsidence of the black matter to the bottom, and the more perfect separation of the enamel-like pure white cyanide which continues to occupy the upper stratum during liquefaction as well as after the subsequent solidification, the boundary between each being well defined. Thus the grand object is at once attained.

Cyanide of potassium thus prepared, is a beautiful white crystalline mass; fusible, without change, by heat; unalterable even by a white heat, provided air be excluded. When protected from air and moisture, it preserves its constitution indefinitely. When its colour is yellow, or when it contains some yellow crystals, or when its solution is not colourless, it has not been subjected to a heat sufficiently high, and it contains iron, which, even in very small quantity, greatly lessens the medicinal power of prussic acid in its combinations. It should have no smell: if it have a smell, it contains water, is of uncertain strength, and is perhaps suffering slow decomposition. All acids decompose it, even the carbonic. Exposed to air, it absorbs moisture; and in damp air deliquesces perfectly, although it does so slowly.

The process of the Codex, excellent as it is in principle, occasions not a little trouble in practice, is liable to accidents and failure, and affords a very scanty product. The stoneware retort is apt to crack in the fire, unless previously well coated with fireclay and well dried: it is, when largest, incapable of containing much; yet it must be but half-filled; and of the product, very small as it is, less than half is pure white cyanide. I have, therefore, in preparing a sufficient supply of the salt, modified the process in such a manner as to render it less difficult, its success less contingent, and its produce more abundant, as follows:—

In place of a coated stoneware retort I use an iron vessel, for this metal has no bad effect on the cyanide. A cast-iron bottle, such as is sold for chemical purposes, will not answer: in my trials, the metal partially melted before it had attained the temperature at which the completeness of the decomposition can be relied on, and before the deposition of the black matter to the bottom has been secured. The vessel must be of forged iron; and a quicksilver bottle will answer perfectly, provided it be sound. In its screw-plug, must be fitted an iron tube so bent that its other extremity may be plunged half an inch below the surface of a little water contained in a cup. This tube is necessary, for during the intense ignition, access of air would partially convert the cyanide of potassium into cyanate of potash. The tube is also convenient as a means of observing the rapidity of the issue of gas, which is violent, and, it is said, even dangerous, unless the heat be at first moderate. By it we can also judge when the decomposition is complete, which will be shown by the cessation of gas-bubbles, notwithstanding that a white heat is maintained.

The precaution of dipping the end of the tube no more than half an inch in the cup of water is necessary, to prevent the contingent ascent of the water into the white-hot bottle, and the explosion which the sudden formation of steam and hydrogen would produce. Should diminution of temperature cause contraction of the gas contained in the bottle, the water, after ascending a few inches in the tube, will depress the level of the water in the cup so low that the end of the tube will be uncovered, and common air will be thus allowed to enter.

The iron bottle is to be but half filled with recrystallized ferrocyanide of potassium—space will thus be left for the swelling of the salt. It is to be introduced into a good air-furnace, and a moderate fire maintained until the issue of bubbles become less violent. The heat is now to be raised gradually to whiteness, and thus sustained for half an hour. The end of the tube plunged in water is then to be corked. The iron bottle, when cold, is to be cut in two by a chisel and heavy hammer—any expert smith can do it: the pure white upper stratum of salt is to be cut out with a small chisel and hammer, enclosing each piece as soon as cut out, in a well-stoppered bottle. Under this pure white stratum, and well defined from it, will be found the black portion; it contains much of the cyanide, and will answer for various purposes, but is unfit for internal exhibition.

During the heating of the salt in the iron bottle, the conducting tube first becomes heated by the transmitted steam; and even before this ceases, an inflammable gas comes over, which, when kindled, burns blue. Although the bottle increases in heat, the conducting tube cools, and then a gas which burns white makes its appearance. When the bottle is thoroughly red-hot, the gas, now very abundant, is no longer combustible, but extinguishes flame: it has an intolerably pungent odour of ammonia mixed with prussic acid.

By this process, a beautiful white salt, possessing full medicinal energy, and never varying in properties in the least degree, is obtained: for nothing can remain in the upper stratum of the contents of the retort, at that elevated temperature, but pure cyanide of potassium.

By solution in cold water, this salt is converted into hydrocyanate of potash, which retains its medicinal power longer than is generally supposed. That this is so, appears from the following experiment made by Dr. Burton of Dublin, in the presence of Sir Henry Marsh, Dr. Banks, and myself. I had prepared the solution of hydrocyanate two years before, and during that period it had not been taken any particular care of. Dr. Burton contrived to introduce the point of a pen, which had been dipped in the solution, into the mouth of a mouse then recently taken in a trap. I calculated that the portion of the solution, thus introduced into the mouth of the mouse, could not have contained one-fiftieth of a grain of the cyanide; yet the mouse, after a momentary

struggle, fell dead. Another, similarly treated, met a still more immediate death. He then tried on a third mouse the same experiment, substituting prussic acid made by me two years before, according to the process of the Dublin Pharmacopœia; but it had no effect whatever. It is true that only two drachms of the acid was contained in a six-ounce phial; but it had been kept corked, and secluded from light.

With all the advantages of energy of effect, constancy of composition, permanence of constitution, identity of medical power at all times and in all situations, provided it be properly preserved, the cyanide of potassium labours under one grand defect, in whatsoever manner it may have been prepared. It unfortunately happens, that this salt attracts moisture from the atmosphere, the obvious consequence of which is, that if exposed to air, any given quantity will continually become weaker in medicinal power; first, because it now contains water, and next, because this water causes the exhalation of prussic acid. The preservation of the salt from the injurious effects of exposure is an object just as important as the excellence of the process for preparing it originally. Here also there is some difficulty. Although the cyanide may be preserved in a well-ground stopper-bottle, the constant necessity of opening the bottle in a compounding establishment (supposing this medicine in extensive use) will at length produce the worst effects.

The misfortune does not stop here, every one knows that it has been proposed to prepare extemporaneous prussic acid of unvarying strength, by the decomposition of cyanide of potassium, effected by tartaric acid; see the process, and a discussion on it between the proposer (Dr. Clarke) and M. Laming, in the *Glasgow Medical Journal*, No. 14, 1831; *Lancet*, 1831; *London Medical Gazette*, xii, 640. I have obtained commercial cyanide of potassium to all appearance fit for medical use, which, instead of being dry, contained as much as 12 per cent. of water. In order to discover how much water this commercial salt was capable of holding, without losing its crystalline form, I heated a quantity of it nearly red-hot, then quickly weighed 100 grains, and left it exposed to a damp atmosphere. After three days it was still in crystals, although obviously damp; its weight was now 123 grains; thus it had attracted nearly one-fourth of its weight of water, yet still remained in a state which might deceive the unwary. Prussic acid made from a salt thus liable to such variations would therefore deserve little more confidence than officinal prussic acid, and it would appear that the preference given by the London and Edinburgh Colleges to ferrocyanide of potassium, or to cyanide of silver, is well founded.

Robiquet and Villermé had proposed that prussic acid should be evolved at the moment when it is to be used medicinally, by mixing an acid with cyanide of potassium, but they preferred the exhibition of the cyanide itself, as a medicine of never-varying strength. Viewing the proposal with reference to the preceding facts, it loses much of its value, unless means be contrived to guard, with certainty, against the absorption of moisture during the many and long-continued exposures to which neglect may subject it.

The plan which I suggest is, that consumers should keep the cyanide of potassium in small wide-mouthed well-stoppered bottles, not quite filled with the salt, but completely filled with alcohol of 0.800. Alcohol of this strength exerts scarcely any solvent power on the cyanide, but it will effectually preserve it from the deteriorating influence of the air. When a few grains are required for use, they may be drawn up by an iron wire, like potassium out of naphtha, and heated in a spoon for a moment to drive off the adhering alcohol.

But there is a better, although a more troublesome plan of preservation than this. Let a glass tube of one-fourth of an inch bore, and twelve or fifteen inches long, of the slightest substance, be sealed at one end over a jet of burning gas, or other large flame. Let it be filled with cyanide of potassium, broken as speedily as possible into coarse powder or fragments, and then let the other end be sealed. In this state the salt will never change. When a small quantity is wanted for use, one of the sealed ends is to be cut off with a sharp file. After withdrawing the quantity required, the cut end may be sealed again at the flame. Every Chemist is expert in the art of cutting and sealing tubes.

I have not deemed it necessary to introduce in this communication the new process of Liebig for preparing cyanide of potassium. It is economial, and produces an article well suited to the purposes of the arts, but as the resulting cyanide contains also cyanate of potash, it is unfit for medical use.

The dose of cyanide of potassium is estimated by Magendie at a quarter of a grain. If it be desirable to convert this into prussic acid, by prescribing it in solution with any weak acid, as syrup of lemon-juice, it is proper to modify the dose. I find, by calculation, that a quarter of a grain of cyanide is equal (*qu. pr.*) to five minims of prussic acid of the strength indicated by the London Pharmacopœia, or to three and a half minims of the strength of the Dublin Pharmacopœia, or to three minims of the Edinburgh Pharmacopœia. It appears to me that these are too large for commencing doses, and, if so, we must infer either that cyanide of potassium does not possess medicinal power equivalent to that of the prussic acid into which it may be transformed, or that Magendie's cyanide contained, or was partially decomposed by water; and from the description which he gives of the process adopted for preparing it, I incline to the latter supposition. Of the cyanide described in this essay, it is very likely that one-eighth of a grain will be found a sufficient dose to commence with, even when the cyanide is converted into prussic acid by the addition of syrup of lemon-juice.

The above numbers, representing the strength of prussic acid of the three Pharmacopœias, are thus derived:—I find by calculation that the strength of the prussic acid produced by the process of the Dublin College, is such that each hundred parts by weight contain 2.82 parts of anhydrous acid. Liebig and Gregory (*Turner's Chemistry*) give data from which we may estimate an acid from the same quantity of materials at 2.5 of dry acid per cent. The London College calculate that their acid contains 2 per cent: but Geiger, who used very nearly the same ratio of materials as the London College, declares that the resulting acid is of the same strength as that of the Dublin College. The prussic acid of the Edinburgh College is estimated, in their Pharmacopœia, at 3.25 per cent. of anhydrous acid.

Conclusion.—By the methods described above, we obtain the cyanide of potassium in a state of permanent preservation, of invariable medicinal power, and of identical energy in all parts of the world; so that physicians cannot misconceive the doses which others found successful. At present, the recorded cases of alleviation or cure by prussic acid, are comparatively of little value on account of the uncertain strength employed in different countries, and by various practitioners; but cyanide of potassium is of the same power every where, and at all times if proper precautions be observed.

The objects of the foregoing essay are as follow;—After reminding practitioners of the many sources of uncertainty which attend the medical employment of prussic acid, and of the advantages of cyanide of potassium as a succedaneum, I have endeavoured to show, that by the method of obtaining this cyanide practised in the British Isles, it is no more to be relied on than prussic acid itself; and that the French method of procuring it, improved by some facilities suggested by me, is the only one that can be depended on. I have adduced reasons for believing, that, even when rightly prepared, no sufficient precautions have been hitherto taken for preserving it in a state of equable energy, and a simple method of effecting this object has been proposed. As a consequence of these suggestions, an improvement in the mode of procuring extemporaneous prussic acid results, which presents the practitioner with that useful agent in a state of never-varying power.

The following is a proper formula when the object is to administer prussic acid produced extemporaneously from cyanide of potassium:

℞. Cyanidi Potassii granum.
Aquæ distillatæ uncias tres cum semisse.
Syrupi Limonum semiunciam.
Misce. Divide in haustus octo. Sumatur unus pro dosi.—*Pharmaceutical Journal.*

OBSERVATIONS ON THE SPLEEN.

Sir,—I beg leave to submit a few observations to the physiological world respecting the spleen, with the hopes that the devout philophysist will perceive truth through the veil which appears to overhang this subject.

If the human body were divided longitudinally along the median line, it would be found that both halves are almost precisely alike; both halves of the cerebrum, cerebellum, medulla oblongata, medulla spinalis; the nerves, the heart, the lungs, the kidneys, the generative organs, the muscles, the bones, the arteries and veins of both sides are pairs, then why should the liver and spleen be not considered as one pair of similar organs?

The stomach and alimentary canal are single, because they are the common reservoirs of nutrition to the body as a whole, the urinary bladder, too, is undivided, because it is a common reservoir to both kidneys and their ureters; the same thing may be said of the aorta, basilar artery, and other single organs. However, the single organs are very few in vertebrated animals, and they are never present but when they serve both halves of the body simultaneously, and we may very naturally conclude *that the spleen is a left liver*, formed according to a certain natural type or pattern.

There is a very great similarity between the liver and spleen which I have not seen noticed by any one. In addition to the above-mentioned jugated general structure of the body into two halves, or twin organs, we find a large plexus of nerves issuing out of the two great semilunar ganglions; this is called the solar plexus. From this one, other important plexuses arise, which entwine and follow the course of the three arteries of the cœliac axis. One plexus surrounds the hepatic artery, and follows its course to supply the liver and its biliary appendage, the other surrounds the splenic artery, and supplies the spleen *and the pancreas*, while the third (a kind of a plexus impar) surrounds the gastric artery, and supplies part of the stomach.

It must now appear at least plausible, that

the liver and spleen are the same organs of opposite sides; but there are other considerations that will very much strengthen this idea, viz., as the spleen and pancreas are supplied by branches of the same nerves and arteries, it is very probable that the pancreas is the same appendage to the spleen as the biliary organ is to the liver, though the latter is intimately connected with the liver itself.

What the pancreas is on the left side, so is the biliary apparatus on the right side. The pancreas is separate from the left liver, (or spleen,) but the biliary system is united to the right liver. (And do we not see a similar anomaly in the origin of the carotid and subclavian arteries?)

The pancreatic appendage of the spleen, and the biliary appendage of the liver terminate together at the ductus choledochus or duodenum; both their fluids unite and mix at the duodenum in the same manner as the urine of both ureters unites and mixes in the bladder. It would appear, therefore, that the biliary and pancreatic fluids differ more in colour and sensible properties than in the uses for which they are both destined in digesting the contents of the stomach and bowels.

The coats of the spleen and liver are subject to peculiar cartilaginous tubercles. The pancreas and gall bladder are also both subject to calculi. Do not these post-mortem coincidences tend to prove that the liver with its bilary appendage, is the same in fact as the spleen with its pancreatic appendage?

If we can identify the liver and the spleen (apart from their respective appendage) as twins, or the same organ of opposite sides, we must suppose, that both serve a similar purpose in the animal economy, and the question is, what is that function? I would ask, is blood a secretion? If so, what part of the body secretes the blood? Is it not the liver and spleen? Is not that function performed in the acini of the liver and spleen? An excretory duct is not necessary to convey an internal secretion like the blood; hence its absence in the spleen, and probably in the true liver—also, if that organ is considered distinct from its biliary system.

If the spleen is diseased or extirpated, the liver, *if healthy*, will secrete a sufficiency of blood; if the liver is diseased, the spleen, *if healthy*, will carry on the process of sanguification; if both are diseased, or in a cachectic state, the whole system becomes languid, and the skin is sallow and bloodless.

Should the above imperfect considerations be approved of by candid men, I shall feel induced to offer a few hints on other subjects connected with vegetable and animal physiology; with respect to vegetable physiology I may state, that I was highly interested about a year ago in a discovery of a nervous system in plants, which may be easily demonstrated by several interesting experiments and preparations; they are possessed of a nervous, living principle, as perfect as a worm.

I am, Sir,
Yours respectfully,
CORVENIUS.

Corwen, April 25th, 1843.

HOSPITAL MISMANAGEMENT.

To the Editor of the "Medical Times."

SIR,—The abuses for which the Westminster Hospital has long been proverbial render, I fear, any interference useless until the arrival of that period (so lucidly described by Mr. Guthrie,) when things will become so very bad that either reformation or total dissolution must follow. To prevent the worse accident, I trust that Mr. Guthrie will quickly prove that he is what he calls himself—the greatest Medical Reformer of the Age; and, although he may abominably hate the school, I hope that he will manifest his kindness at least to the hospital.

But, sir, the school, which is the chief source of my complaint at present, has deeply partaken of the contagion of its *Alma Mater*, which, as a matter of course, must render it unfit to give either the instructions or advantages held out to students in the shape of promises and advertisements, very many of which, made at the commencement of last session, have not been yet fulfilled. The *Lectures on the Practice of Medicine* might well be termed, *vox et præterea nihil*: indeed, such a chaotic and highly unscientific course of lectures should not be allowed to pass without censure at a time when the world is teeming with improvements. Yet, in this case, an hospital physician has been the performer—a man who would willingly proclaim himself the Worshipful Deity of Physic.

* * * * * *

This mysterious lecturer, known by the name of Dr. *Hamilton* Roe (to distinguish him from the Richard Roe of the attorneys), instead of coming at the appointed time, generally made his appearance half an hour afterwards, and then continued his lecture for not more than twenty, or, at the most, twenty-five, minutes, during which his delivery was so very tardy-forced and sacerdotal, and the matter of his lecture so hurriedly and mystically arranged, that it was quite impossible to derive any benefit from his discourses. I also beg to add, that he never came more that one half the evenings appointed for his lectures, and invariably omitted the courtesy of forewarning his pupils of his intended absence. Should such conduct, sir, be tolerated in a respectable school? Should intelligent pupils and gentlemen put up with such extraordinary ill-treatment on the part of a lecturer, *whom they duly pay*, however much intimidation he may practice concerning certificates? Such intimidation being Dr. Roe's motto, I should not have sent you this faithful and correct account of his conduct, were it not that I have my certificate signed for the past session, and will take good care never to attend another course by Dr. Roe.

The lecturer on Materia Medica did not give more than two-thirds of the lectures required by the College of Surgeons and Worshipful Society.

[Our correspondent then refers to Dr. Wilks' retirement, to the approaching "alarming" course of Jurisprudential Lectures, &c., and concludes]:—I trust, sir, your great love of justice and unflinching desire to rectify abuses in public hospitals, will cause you to insert this letter for the perusal of the governors of Westminster Hospital.

I have the honor to be,
Your most obedt. humble Servt.,
A PUPIL OF WESTMINSTER HOSPITAL.

April 22d, 1843.

[We have omitted some portions of this letter because unnecessarily personal, and containing opinions on professional merits tinctured, apparently, but too strongly of the excited feelings naturally produced by the extreme injustice our correspondent has evidently suffered. We have, however, as the only court of appeal open to deceived and injured medical students, felt it a part of our duty to give insertion to the rest. With "the student" we emphatically ask how long is this *shabby, shuffling, swindling* system to be borne? Dr. Hamilton Roe entered into a contract—so strictly a contract that its terms might be enforced at law—to give a fixed definite amount of medical information to students paying him the price stipulated for. He got their money and then withheld the consideration for which it was given! This breach of human faith is not of a character—we may tell Dr. Roe—to be compensated by any overflowing possession of *the divine*. It is as rank a piece of dishonesty as that perpetrated by those companions of another teaching physician—the low vagabonds of the West Middlesex Insurance Company; and its mischief is not abated by the grave circumstance that the deficit of medical knowledge caused by the swindling may be the cause of mutilation or death to many who will one day be brought within the students' range of practice.—ED.]

MR. PAGET'S DISCLAIMER.

To the Editor of the 'Medical Times.'

SIR,—It is stated in a letter by Mr. Jackson, in your last number, that I am the reputed editor of both the *Medical Gazette* and Dr. Forbes's Journal. It is not my intention to notice any other of Mr. Jackson's observations; but I shall be much obliged by your permitting me to give this an unqualified denial in your next number. With the *Medical Gaz.* I have had no connection whatever for more than a year; and with Dr. Forbes's Journal I have none, but such as many others have, who are occasionally requested to contribute to its pages.

I have the honour to be, Sir,
Your obedient Servant,
JAMES PAGET.

April 22, 1843.

MR. CLENDON'S REPLY.

To the Editor of the 'Medical Times.'

SIR,—My attention has been directed to a charge made against me by a correspondent of yours who writes himself a "*Friend*," which charge you (very justly) suppose has only to be named to secure a refutation. "It is asseverated, then, that in the *Medical Gazette*, No. 37, June 4, 1841, Mr. J. Tomes wrote an article "on the construction and application of forceps for extracting teeth," which is *in petto* the work of Mr. Clendon, &c. &c.

Now, Sir, it is often difficult to *prove* a negative, and in the present instance my answer to the charge must necessarily rest upon my unsupported assertion; but I must solemnly pledge you my word as a man, and as a gentleman, that when my book was written, I was not only ignorant that Mr. Tomes had written a paper on forceps, but never remember to have heard that gentleman's name; and further, that up to the moment I write, I have never seen, either the *Medical Gazette* for June 4, 1841, or the article to which your correspondent refers. The remainder of the charge, under such circumstances, requires no answer; but I would ask your correspondent in which part of the work I claim the forceps as my own. I have been blamed, and with greater appearance of justice, for giving so much praise—where I thought it due—to the instrument-maker, and even accused of writing for his benefit; but the fact is, my great object being to *establish a principle*, I was particularly desirous of not taking credit to myself, foreseeing how much jealousy such a course was calculated to produce; besides, I well knew that perfection is not reached at a stride, but by gradations,—and, in proof of this, I have lately been shewn forceps, in which the same principle is *attempted* to be carried out. These instruments bear the name of "Fay" and have been made nearly twenty years. I may also mention the observation of an eminent physician, who, on seeing my case of forceps exclaimed, "Ah! you have borrowed this idea of Cartwright;" and another gentleman, a member of my own profession, informed me he had used forceps, made on a similar plan, but not so perfect nor well-finished for the last three years, and that he had borrowed the idea from a relative, an extensive practitioner in

the country. So much, then, for originality. As I had no idea of turning instrument maker, or deriving a profit from the sale of forceps, I laid no claim to it, but sought only to establish the principle on which they remove teeth, and shew the advantages of well-made forceps over the key instrument—arguments which no one has yet attempted to disprove.

I am, Sir,
Your obedient Servant,
J. CHITTY CLENDON.

15, Condult Street, Hanover Square.
April 24, 1843

DR. DICKSON AND DR. LAYCOCK.

To the Editor of the "Lancet."

Do not, sir, imagine that any trick, or artifice, however ingenious, can juggle me out of a discovery which it has been the labour of my life to establish—the discovery of the periodic movement of all vitality—of the periodicity of life in health—the periodicity of life in disease—of the periodicity of movement of universal nature! You will not, you say, allow me to make use of the columns of your Journal "for promulgating a charge of piracy against a highly respectable physician unless I accompany that charge with proofs of the accuracy of my allegation," and in the same breath you add "the subject is in process of investigation, and a perfectly fair and just decision shall be the result." What! an investigation and decision *without* proofs! Not Mr. Thomas Wakley surely, but some blockhead of an underling must have penned that absurdity. Proofs! What, proofs do you demand—words? dates? or both? words, or dates, that the papers recently printed and eulogized by you under the head of "Vital Periodicity, by Dr. Laycock" are so many mean attempts to plagiarize my doctrine of the periodic movement of all vitality! Sir, the proofs are already in your possession, they are contained in the Fallacy of the Art of Physic, &c.; the Unity of Disease, and Fallacies of the Faculty, 1st. 2nd. and 3rd. and foreign editions, nay, they are stamped, indelibly stamped, on your own pages! Look to the *Lancet* for Sept. 1837, and you will there find, what Dr. Laycock now so modestly puts forth as *his*, the whole doctrine of vital periodicity given by myself. Let me quote it.—"The principal aim of my volume (*Fallacy of the Art of Physic, &c.*, published in 1836) has been to demonstrate that the corporeal actions of man in his healthy state constitute the basis or standard of EVERY KIND of LIVING action (all vitality?) In health he rests from his labour—he sleeps—he wakes to sleep again—his lungs now inspiring air, now expelling it; his heart successively dilating and contracting, his blood brightening in one set of vessels only again to darken in another—his food and drink nutritious one hour to become excrementitious the next—in a word all his appetites and necessities PERIODICALLY alternating with each other." Nor do I confine this doctrine of periodicity to health—for in the same number of the *Lancet* you will find the following. "Is it not strange that the profession should still couple REMITTENCY (periodicity?) exclusively with miasma or malaria as a cause. Every writer who has professedly treated the subject, refers to this, (malaria) seeming to be totally and absolutely unconscious of the universality of remission (periodicity?) as a law of all disease" Thus far I have quoted from what I have written and published in your own pages. From the *Unity of Disease*, first published in 1838, I extract the following. "The body under disease exhibits revolutions analogous to those in health, it shews a similar tendency to *alternate* motion and repose, for PERIODS *more or less regular*, are observed to mark the approaches, duration, and interval of recurrence of the morbid phases," and in the first edition of Fallacies of the Faculty, published in 1839, is the following. "So far, however, from having been recognized as a *law* of *universal* occurrence, harmonizing with every thing which we know of *our own or other worlds*, PERIODIC return has been vaguely supposed to stamp the disorders where it was too striking to be overlooked as the exclusive offspring of a malarious or miasmatic atmosphere." "The human body, whether in health or disorder, is an epitome of every great system in nature. Like the globe we inhabit, it has in health its diurnal and other revolutions, its sun and its shade, its time and seasons, its alternations of heat and moisture. In disease we recognize the same long chills and droughts, the same passionate storms and outpourings of the streams by which the earth at times is agitated, the matter of the body assuming in the course of these various alternations, changes of character and composition, such as tumours, abscesses, and eruptions, typical of new formed mountain masses, earthquakes, and volcanoes, and all these, too, like the tempests and hurricanes of nature INTERMITTING with longer or shorter PERIODS of tranquillity, till the wearied body either regains, like our common mother, its wonted harmony of motion, or like what we may conceive of a world destroyed becomes resolved into its pristine elements." In these extracts not only have I given the doctrine of periodicity of health and disease in ALL vitality, but the doctrine of universal periodicity—of the periodicity of ALL NATURE! Further proofs, if further proofs be wanted, you will find in the volumes I have already placed in your possession, although in the list of your "books received" you have not thought it politic to include their names. Under these circumstances, to refuse to print my charge against Dr. Laycock in the journal that contains his piracies, would be to refuse me common justice. It would be the act of one who has received stolen goods knowing them to be stolen. By such a course you would reduce your periodical to the level of the *British and Foreign Medical Review*, the editor of which, Dr. Forbes, first misquoted, misrepresented, and then endeavoured to divide the honour of my discovery between your protegé, Dr. Laycock, and his Court colleague, Dr. Holland, whose plagiarisms I had so fully exposed in the volume Dr. Forbes pretended to criticise. In his number for January, 1843, Dr. Forbes damns the doctrine of periodicity and remittency when it comes from me. Three short months afterwards (April) he has the effrontery to print the following. "The intermittent nature of disease must most certainly be better understood before we can practise medicine scientifically."—"Dr. Holland has an interesting essay on the subject in his *Medical Notes and Reflections*, and more *recently* Dr. Laycock has attempted to demonstrate a *general* law of periodicity."—"If his researches prove to be correct, a considerable change must necessarily take place in both the theory and practice of medicine." Such baseness, Sir, is perhaps unparalleled in the history of any science. It has proved to me that I had neglected to make myself acquainted with one element of periodicity—"PERIODICAL" rascality—an element, however, I am pretty well prepared to encounter, with the little monosyllable DATES. To these and to the public—if not to the profession—I appeal. I am, Sir, your most obedient,

S. DICKSON.

[It is not the exposure of the lamentably increasing mental weakness of our lingering contemporary, *who, in the admitted absence of the necessary proofs*, is to bring an intricate investigation to a *fair*, nay, "to a *perfectly fair* and *just* result," nor the general picquancy of style pervading Dr. Dickson's letter, that has induced us to give it insertion. Having published the more interesting portion of the impeached lucubrations, we have felt ourselves under a necessity, in justice, to put forward the reclamations of the party claiming a prior possession of the property. Our columns are equally open to Dr. Laycock, if he feel with us the propriety of relieving himself from the charge advanced against him.—ED.]

APPEARANCES OBSERVED ON INSPECTING THE MORTAL REMAINS OF HIS ROYAL HIGHNESS THE DUKE OF SUSSEX.

April 23, 1843.

In the head there were no signs of disease, except that a serous fluid was effused between the membranes by which the brain is immediately invested.

The mucous membrane lining the throat and windpipe was of a dark colour, in consequence of its vessels being unusually turgid with blood. In other respects these parts were in a perfectly healthy state.

In the chest—The lungs presented no appearance of disease; the heart was of rather a small size, and the muscular structure was thin and flaccid. On the right side of the heart there was no other morbid appearance; but the valves on the left side, both those between the auricle and ventricle, and those at the origin of the aorta, were ossified to a considerable extent. The coronary arteries were considerably ossified also.

In the abdomen—The liver was in a state of disease, presenting a granular appearance throughout its whole substance.

In the lower bowel there were some internal hæmorrhoids: but there were no marks of disease either in this or any other of the viscera.

(Signed) WM. FREDERICK CHAMBERS, M.D.
HENRY HOLLAND, M.D.
BENJ. C. BRODIE, Serjt.-Surgeon.
ROBERT KEATE, Serjt.-Surgeon.
JOHN DORATT.
JOHN NUSSEY.

MEDICAL NEWS

LECTURES ON INSANITY.—We hear that at St. Luke's Hospital Dr. Sutherland has obtained permission to deliver lectures. The two last are to be clinical, and all are to be of admission to medical students.—At Hanwell, Dr. Conolly is about to commence a course of eight clinical lectures, in lieu of six, as given last year.—The students are to be limited to sixteen, and are to be selected from the various hospitals. Bethlem Hospital is not yet on the move, notwithstanding Dr. Webster's appeal noticed by us some time back.

WESTMINSTER HOSPITAL.—*Operations for Steatomatous Tumour of the Face, and for Cancer of the Lips.*—On Saturday last two operations were performed at this hospital: one for the removal of a steatomatous tumour of the face, and the other for the extirpation of a cancerous excrescence from the lower lip. In the removal of the tumour from the face, by Mr. Lynn, three circumstances were particularly insisted upon by the operator:—1st. The removal of the tumour without opening the capsule; 2d. The leaving no part of the capsule, should it be accidentally opened, behind; and 3d. The removal of the tumour with as little disfiguration as possible The tumour was quickly turned out without opening its capsule; the edges of the wound accurately adjusted, and retained by

adhesive plaster and the usual bandages.—In the second case the tumour, was of the size of a large strawberry, involving the free margin of the lower lip, and presenting all the characters of true carcinoma; the glands at the angle of the jaw were not affected, and the patient, though sixty-five years of age, was in good health. In removing the excrescence, which was cleverly done by Mr. Thomson, two circumstances were particularly brought under the observation of the pupils:—1st. The propriety of removing in such cases every portion of the diseased structure, which was well exemplified; and 2dly, the superiority of stitches to pins in retaining the edges of such wounds. After the cancerous structure was removed, the edges of the wound were brought together, adjusted, and carefully stitched, and afterwards supported by strips of adhesive plaster and a bandage.

Westminster Hospital.—We have great pleasure in recording the achievement, in one of our principal hospitals, of a great improvement which we have more than once strenuously advocated. The example of the Westminster Hospital cannot fail to be followed by the other institutions connected with medical education. At a special meeting of the House Committee held here on Tuesday, the 25th April, 1843, upon the motion of Mr. Guthrie, the following resolutions of the medical officers of the hospital were unanimously adopted, viz.:—"The physicians and surgeons of the Westminster Hospital, believing that great advantages may result to the hospital and to the school attached to it, by making the situations of house surgeon and physicians' clinical assistant, rewards for general merit, zeal in the pursuit of knowledge, and professional attainments, have resolved: That they will hold examinations half-yearly or yearly of the students of the hospital and school, whom the lecturers of the school may recommend to them as candidates for the offices above-mentioned, and if they find two of such students duly qualified, they will recommed them to the weekly committee for the appointments of house surgeon and physicians' clinical clerk. That, if the physicians and surgeons should not find two of these gentlemen sufficiently qualified in every respect for these appointments, the physicians and surgeons reserve to themselves the right of recommending students who may apply from other quarters. That the students of the school shall, if appointed, have these offices free of expense, but if students are appointed from other sources, they must pay the usual fee of eighty pounds. That for the purpose of encouraging students to increased diligence, as well as of training them for their offices under the superintendance of more experienced persons, they will also appoint, gratuitously, half-yearly assistant or junior house surgeons and physicians' clinical assistants."

Medical Reform.—Mr. Macaulay wished to put a question to the right hon. baronet the Secretary of State for the Home Department respecting a very important subject—he meant the subject of reform in the medical profession. He wished to know whether those negotiations, which he had been told were in progress some time ago on this subject, had been brought to such a termination as to enable the introduction of a bill into Parliament on the subject? He wished to know, secondly, whether there was any reasonable expectation of such an act being passed into law this session? And thirdly, if the right hon. baronet felt that they could not expect to pass a general measure on the subject this session, whether he would have any objection to introduce into the Poor Law Act a clause to remedy the most pressing and crying grievances under which the medical profession now laboured from the construction of the present law in the exclusion of Scotch and Irish medical men from practising in the workhouses? Sir J. Graham said, he had no hesitation in saying that the negotiations to which the right hon. gentleman referred had been so far successful as to leave no doubt on his mind that in a very short period he should be able to ask the leave of the house to introduce a measure with respect to the medical profession. As to the second question of the right hon. gentleman, whether there was any hope of passing such a meaure this year, that of course must depend on the reception given to it. He was disposed to think that the measure was worthy the attention of the house, and he should bring it forward in the expectation that it would pass this session. At the present time he felt certain he should be able, in the course of the present session, to bring forward a measure on the subject, and it was his confident belief that it would pass into a law this session. He should only advert briefly to the third point. He felt that the practitioners of Scotland and Ireland were subjected to great hardship by the interpretation put on the act with reference to English practitioners, and that some legislative measure was called for on that particular point.

St. George's Hospital Medical School Prizes, for Session 1842-43.—*Clinical Medicine.* Prize, Mr. Edward Tegart; Hon. Certificate, Mr. A. Ebsworth.—*Practice of Physic.* Prize, Mr. E. W. Woodcock; Hon. Certificate, Mr. Driver.—*Surgery.* Prize, Mr. G. H. Hopkins; Honorary Certificate, Mr. William Leshley.—*Materia Medica.* Prize, Mr. George F. Fletcher; Honorary Certificate, Mr. T. H. Smith.—*Anatomy.* Senior Prize, Mr. G. W. Kingsley; Honorary Certificate, Mr. Thomas Warburton; Junior Prize, Mr. T. H. Smith; Honorary Certificates, Mr. H. Gray, Mr. John Clarke, Mr. J. George.—*Midwifery.* Prize, Mr. William Spackman; Honorary Certificate, Mr. E. W. Woodcock.—*Botany.* Prize, Mr. R. F. Jarvis; Honorary Certificate, Mr. James Budd.

PERISCOPE OF THE WEEK.

Sickness in Factories.—Mr. Harrison, the inspecting surgeon for the mills of Preston and its vicinity, within whose jurisdiction there were 1656 individuals employed in mills under 18 years of age, of whom 952 were engaged in spinning-rooms, 468 in carding-rooms, 128 at power-looms, and 108 in winding, skewering, &c., in his report, stated that the average annual sickness of each child is not more than 14 days; at least that not more than 4 days on an average are lost by each child in a year in consequence of sickness. This includes disorders of every kind, for the most part induced by causes wholly unconnected with factory labour. He has met with very few children who have suffered from injuries occasioned by machinery; and the protection, he says, especially in new factories, is now so complete that accidents will speedily become rare. He has not seen a single instance of deformity referable to factory labour out of 1,656 children examined by him. It must be admitted, he adds, that factory children do not present the same blooming robust appearance, as is witnessed among children who labour in the open air, but he thinks they are more exempt from acute diseases, and on the whole, suffer less sickness than those who are regarded as having more healthy employments. The average age at which the children of the district enter the factories is ten years and two months; and the average of all the young persons together is 14 years. Sir David Burney, in his factory commission report, observes further that young persons, especially females who have begun mill-work at from 10 to 12, independently of their becoming much more expert artists, preserve their health better, and possess sounder feet and legs at 25 than those who have commenced from 13 to 16 and upwards.

Royal Society.—On the special function of the skin, by R. Willis, M.D. The purpose which is answered in the animal economy by the cutaneous exhalation has not hitherto been correctly assigned by physiologists; the author believes it to be simply the elimination from the system of a certain quantity of pure water, and, he considers, that the saline and other ingredients which pass off, at the same time, by the skin, are in too inconsiderable a quantity to deserve being taken into account. He combats, by the following arguments, the prevailing opinion that this function is specially designed to reduce or to regulate the animal temperature. It has been clearly shewn by the experiments of Delaroche and Berger, that the power which animals may possess, of resisting the effects of a surrounding medium of high temperature, is far inferior to that which has been commonly ascribed to them, for in chambers heated to 120 or 130 deg. F. the temperature of animals is soon raised to 11 or even 16 deg. above what it had been previously, and death speedily ensues. The rapid diminution or even total suppression of the cutaneous exhalation, on the other hand, is by no means followed by a rise in the temperature of the body. In general dropsies, which are attended with a remarkable diminution of this secretion, an icy coldness usually pervades both the body and limbs. A great fall in the animal temperature was found by Foucault, Becquerel, and Breschet, to be the effect of covering the body with a varnish impervious to perspiration, and so serious was the general disturbance of the functions in these circumstances, that death usually ensued in the course of three or four hours. The question will next arise, how does it happen that health and even life can be so immediately dependent as we find them to be on the elimination of so small a quantity of water as 3.3 ounces from the general surface of the body in the course of 24 hours? To this the author answers, that such elimination is important as securing the conditions which are necessary for the endosmotic transference between arteries and veins of the fluids which minister to nutrition and vital endowment. It is admitted, by physiologists, that the blood, while still contained within its conducting channels, is inert with reference to the body, no particle of which it can either nourish or vivify until that portion of it which has been denominated the *plasma* has transuded from the vessels, and arrived in immediate contact with the particle that is to be nourished and vivified, but no physiologist has yet pointed out the efficient cause of these tendencies of the plasma, first, to transude through the wall of its different vessels, and, secondly, to find its way back again into the different conduits. The explanation given by the author is that, in consequence of the outgoing current of blood circulating over the entire superficies of the body, perpetually losing a quantity of water by the action of the sudoriparous glands, the blood in the returning channels has thereby become more dense and inspissated, and is brought into the condition for absorbing by endosmosis, the fluid perpetually exuding from the arteries, which are constantly kept on the stretch by the injecting force of the heart. In an appen-

dix the author points out a few of the practical applications of which the above-mentioned theory is susceptible. Interference with the function of the skin, and principally through the agency of cold, he observes is the admitted cause of the greater number of acute diseases to which mankind in the temperate regions of the globe are subject. He, who is said to have suffered a chill, has, in fact, suffered a derangement or suppression of the secretory action of the skin, a process which is altogether indispensable to the continuance of life, and a disturbance of the general health follows as a necessary consequence. Animals exposed to the continued action of a hot, dry atmosphere, die from exhaustion; but when subjected to the effects of a moist atmosphere, of a temperature not higher than their own, they perish much more speedily, being destroyed from the same cause as those which die from covering the body with an impervious glaze; for, in both cases, the conditions required for the access of oxydised, and the removal of de-oxydised plasma are wanting, and life necessarily ceases. The atmosphere of unhealthy tropical climates differs but little from a vapour-bath at a temperature of between 80 and 90 deg. F., and the dew-points in those countries, as for example on the western coast of Africa, never ranges lower than 3 or 4 deg., nay, is sometimes only a single degree below the temperature of the air. Placed in an atmosphere so nearly saturated with water, and of such a temperature, man is on the verge of conditions that are incompatible with his existence; conditions which may easily be induced by exposure to fatigue in a humid atmosphere under a burning sun, or other causes which excite the skin, while they prevent the exercise of its natural functions. The terms *miasma* and *malaria* may, according to the author, be regarded as almost synonymous with air at the temperature of from 75 to 85 deg. F., and nearly saturated with moisture.

On the import and office of the lymphatic vessels, by R. Willis, M.D. That absorption is the special office of the lymphatic vessels was until very lately an universally received doctrine in physiology; but it is, now, admitted that if they exercise this faculty it can be only to an inconsiderable extent; and physiologists of high authority have even denied that they possess any absorbing power at all. This last is the opinion of Magendie in which the author concurs. So lately as 1841, Rudolph Wagner asserted that neither anatomical nor physiological considerations render any satisfactory account of the import and office of the lymphatics, which, thus shorn of their ancient office, were repudiated as a superfluous apparatus in the animal mechanism. The grand organs of absorption the author believes to be the veins, and a principal object of his paper is to point out the mode in which they acquire this remarkable faculty.

Potash and Lime in Flint.—It is known from Klaproth's analysis, that flint contains lime; but Berzelius has also found potassa in the flint of the chalk of Limhamn, in Schonen. In 1000 parts of flint, he detected 1.17 parts of potassa, and 1.13 parts of lime, with traces of oxide of iron, and likewise a small quantity of a carbonaceous matter, which left no residue on being ignited, and which probably produces the colour in flint resembling the tint of dingy yellow topaz. The analysis was undertaken with the view of ascertaining the cause of the decomposition of the surface of a flint knife, a change not unfrequently observed in flint exposed to the action of the atmosphere. The result obtained was, that the interior and undecomposed portion of this knife contained in 1000 parts, 1.34 potassa, 5.74 lime, and 1.2 oxide of iron and alumina. The decomposed portion, on the other hand, which could easily be rubbed off in the state of powder, contained in 1000 parts, 3.2 parts of potassa and 3.2 parts of lime; whence it would seem that the decomposition had its origin in a long continued action of a liquid containing potassa, which gradually replaced the lime by potassa. The decomposition proceeded progressively, so that it had already evidently commenced in the still coherent portion of the flint, and had formed a white stripe round the mass, having a breadth of 0.3 to 0 4 decimal lines.

On Coca and Matico.—Dr. Martius examined a specimen of the noted Coca or Ypada of the Brazils. It is the leaf of the Erythroxylon Coca growing on the other side of the Andes. These leaves are chewed by the native Indians, as we use tobacco, a small pinch is wetted with saliva, and made into a ball with unslacked lime. The Indians who are capable of undergoing great fatigue, will, during the most strenuous exertion, subsist on one or two spoonsful of maize flower mixed with water, daily, and their coca. The use of this plant has become as much an abuse amongst them, as opium-smoking in China. Its effect is to deaden sensation, and produce even madness; it has, morally, a most pernicious influence on those who take it in excess. —The matico, or matica, so highly esteemed in Peru, Dr. Martius believes to be a species of phlomis. The tree grows in the interior of Peru, also on the other side of the Andes. Its leaves are said to possess marvellous medicinal properties. The preparation for use among the Indians is very simple: the leaf is dried and finely powdered, and the dust, sprinkled on wounds, is said to effect cicatrization very speedily. The Indians use an infusion of the fresh leaves as an aphrodisaic, and attribute to them the power of arresting arterial hæmorrhage, even if a large vessel be wounded.

Manufacture of attar of Roses.—To procure the attar the roses are put into the still, and the water passes over gradually as in the rose water process. After the whole has come over, the rose-water is placed in a large metal basin, which is covered with wetted muslin tied over to prevent insects or dust getting into it. This vessel is let into the ground about two feet, which has been previously wetted with water, and it is allowed to remain quiet during the whole night. The attar is always made at the beginning of the season, when the nights are cool; in the morning early, the little film of attar which is formed upon the surface of the rose-water during the night, is removed by means of a feather, and it is then carefully placed in a small phial, and day after day, as the collection is made, it is placed for a short period in the sun, and after a sufficient quantity has been produced, it is poured off clear, and of the colour of amber, into small phials. Pure attar, when it has been removed only three or four days, has a pale greenish hue; by keeping it loses this, and in a few weeks' time, it becomes of a pale yellow. The attar purchased in the bazaar is generally adulterated, mixed with sandal oil, or sweet oil; not even the richest native will give the price at which the purest attar alone can be obtained; and the purest attar that is made, is sold only to Europeans.

Sulphuric and Molybdic Acids.—Dr. Thomas Anderson, of Leith, has lately made some experiments on the relations of these two acids. The molybdic acid dissolves in the sulphuric, but the combination cannot be made to crystallise by evaporation. However, on decomposing molybdate of baryta, with an excess of sulphuric acid, and evaporating the solution over sulphuric acid, a crystallized compound is obtained, which, according to the analysis of Anderson, consists of sulphuric acid 57.3, molybdic acid 32.8, water and loss 9.9. Two isomeric modifications seem to be indicated.

Benzoic Acid in Elecampane.—Rœtscher has found in a vessel that had contained an alcoholic extract of the Rad. Inulae, also on the cover of the vessel in which it had stood. pointed crystals of benzoic acid.

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DR. STEGGALL continues his Lectures and Examinations for the College and Hall, and all other Medical Boards. Dr. S. has removed from No. 17, Bloomsbury-square, and his Lecture and Class Room will be in future at his private residence No. 2, Southampton-street, Bloomsbury-square.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 189. Vol. VIII. LONDON, SATURDAY, MAY 6, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

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SUMMARY.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

We yesterday considered the air tubes superficially, and we now come to the deeper seated diseases, those which affect not only the mucous membrane, but also the submucous cellular tissue and the membranes likewise. In this case the disease is generally speaking more serious. Now, you will recollect what I said under the head of phlegmonous inflammation; that it is usually more circumscribed, and more intense, and its products are more concentrated; and consequently you might scarcely expect that it would lead to serious consequences. There is another difference, too, you will recollect, with regard to phlegmonous inflammations, or those deeper-seated inflammations, that involve the mucous surface and the cellular tissue, and that is, that the effusions produced by them are rather watery—more abundant usually than the natural secretion. The first of these to be spoken of is laryngitis, inflammation of the larynx in the adult, and there is an affection occurring in the young subject, constituting croup. The larynx is often affected with common catarrhal inflammation; in these affections the larynx takes its share. Now connected with this hoarseness and the common symptoms of a severe cold, there is superficial inflammation, accompanied by a trifling swelling, which seriously impedes the passage of the air; and you find that the same sort of thing occurs in the chronic form, affecting the voice to a considerable degree. We find that the intense and deep-seated inflammation causes not only hoarseness, but likewise a certain obstruction, or a swelling of the glottis, and other parts, at the upper portion of the air tubes, so as materially to impede the passage of the air, and this instead of being a tributary disease is really one of the most formidable to which the human frame is subject. There are a great number of varieties of this disease; Dr. Chambers has given 19, but I do not see any necessity practically to distinguish more than two. These exhibit great distinctions in their characters, and likewise in their treatment, and they are the *sthenic* and the *asthenic*. The sthenic laryngitis sometimes arises from other inflammations, such as tonsillitis, or inflammation of the tonsils, which is often deep-seated inflammation, accompanied by a great deal of swelling, which sometimes goes on to laryngitis. Sometimes it begins in the larynx first, and is accompanied by fever, and the local symptoms are chiefly manifested by harshness and the usual symptoms of a cough, implying some degree of tightness, tension, or constriction in the upper part of the passages, which are naturally constricted in the act of coughing, but under these circumstances they are more so than usual. Sometimes it is like a bark, and it is often of a very convulsive character, and the shock is so great as to agitate the whole frame violently. Now this is interesting, as showing increased irritability, which is produced in a great degree in hooping cough. Sometimes in nervous subjects, there is not only irritability of the larynx and of the upper part of the air tubes, but in convulsive coughs that irritability is increased to a high degree. This symptom is treated of under the head of general pathology, in connection with the increase of the excito-motor function connected with the larynx. Then, besides this, there is a tenderness and pain, and a feeling of constriction in the larynx. The tenderness is also felt outside, and the pain is sometimes dull, and not to a great amount; rather a sense of uneasiness. With the constriction of this door to the lungs, the breath is prolonged to a sonorous inspiration, a difficult breathing. It comes under the head of difficult breathing, before considered, but there are certain differences about this which distinguish it from other difficult breathing. On examining the chest, you see the motions so fair and so equal on both sides that a perfect expansion takes place; but each inspiration is a long process, and it is obvious that the patient is labouring and struggling to enlarge the cavity of the thorax in order to admit more air than will come into it. There is likewise what I mentioned with regard to the intercostal spaces, a depressed state of them, particularly about the diaphragm, where it turns downwards. In trying to fill the chest, there is a contraction of the muscles, but still air does not get into the chest, and accordingly atmospheric pressure acts on these muscles, and the pressure is perceived in the intercostal spaces chiefly. These impediments to the passage of air into the larynx chiefly affect inspiration, because the aperture is smaller in inspiration than in expiration. The sides of the glottis have a natural tendency by the passage of air into the chest to approach each other; and this becomes exaggerated when an obstruction takes place, and the inspiration is particularly prolonged and difficult. This prolonged sound is accompanied by a ringing, sometimes a bark, and sometimes a crowing, and in some other cases the sounds seem as if drawn through a metallic tube; but if you listen you will find the sound is in the larynx. Instead of being seated in the bronchi, as in other cases, it is heard all over the chest, but not so distinctly or loudly as over the region of the larynx, particularly along the course of the trachea, where the current goes, and where this particular ringing, or tubular sound is heard, in a great degree, especially in inspiration. Expiration is frequently much more free. On inspection of the fauces, they are sometimes found red and swollen, and sometimes it has happened that the epiglottis, instead of lying pliable, is erect, rigid, red, and highly inflamed, and in that state it has no longer the effect of protecting the glottis in the act of swallowing. The sides of the glottis are extremely irritable, and are protected by the epiglottis lapping over them, but inasmuch as the epiglottis is fixed, and will not lie down upon the glottis, the act of swallowing is often attended with a convulsive cough. Now, with regard to the fever, in the acute or sthenic form of inflammation. There is a quick and hard pulse, hot skin, and general uneasiness, but no sooner is the breathing materially impeded by this obstruction, than you begin really to see the effects of asphixia. And we have always asphixia superadded to all diseases of the respiratory organs, by which the respiration is materially impeded. Asphixia is sometimes added suddenly, and sometimes gradually. Sometimes the patient takes something that strangles him; you perceive something grasping his throat, as it were, stopping the air passages at their very entrance, and this produces the various and peculiar symptoms of asphixia. According to its continuance, so the breathing becomes more difficult; the countenance becomes extremely anxious, the eyes staring greatly, the nostrils inflated, and the voice reduced to a whisper; the patient remains restless, struggling about in terror for breath, with not the least strength; he cannot lie in bed, but gets up, goes to the window, and walks about; his anxiety is intense, and terror and despair are depicted in his countenance; he struggles for breath in every possible way. This alternation of rest and agitation, sleeping now for ten minutes, and then starting up violently and gasping for more breath, goes on for a longer or shorter time (it never lasts very long), until at last it begins to produce its effect on the circulation, sometimes causing delirium. Sometimes the patient sinks suddenly in one of these struggles for breath—as it were, suffocated instantly: and this is the fatal termination which may occur generally, on the average, on the 4th or 5th day, and occasionally much earlier. Sometimes this termination may be delayed for two or three weeks.

Now, the difference between asthenic and sthenic laryngitis, is somewhat the same as that I mentioned with regard to the difference between asthenic and sthenic bronchitis. The asthenic variety is little more than an inflammatory fever. There is often no pain in the region of the larynx, or what there is, is of a lower degree, and there is rarely any difficulty in swallowing. Sometimes there is hoarseness in the cough, and difficult respiration from constriction or stoppage at the top of the windpipe, but the dyspnœa is very slight. In the sthenic form these symptoms are greatly aggravated by the spasmodic contractions which occur in the course of the disease, and which may prove suddenly fatal. Sometimes the patient becomes insensible after a repetition of these attacks. The asthenic variety of laryngitis has been long known under the name of œdema of the glottis, and considered not to be an inflammation. The epiglottis is more commonly found free, and is not affected in the same way so as to produce the same rigidity, as in the sthenic variety. The sthenic variety of laryngitis arises from the common causes of inflammation; from cold, for instance, and, as I mentioned before, from the extension of the inflammation from the tonsils, and sometimes from the parotid glands, and is often produced by irritating causes. Swallowing hot or corrosive liquids, will often cause, immediately to the surprise of many, a swelling of the tonsils and great irritation and spasmodic constriction of the larynx. In violent efforts of coughing, the larynx suffers more than the pharynx. When the muscles contract, they prevent the entrance of anything into the pharynx, whereas by the violent coughing the larynx remains more open. This occurs in children, and Dr. Marshall Hall pointed it out as a common occurrence. Children left by their parents at home are often in the habit of drinking hot water out of a tea-kettle; they cannot distinguish whether the water is hot or not, and they often go to the kettle and suck the water, which causes a violent scalding, and that is followed by laryngitis. The asthenic form of laryngitis may occur from erysipelatous inflammation, and from small-pox, scarlatina, measles, and œdema of the larynx from permanent disease. The way in which this proves fatal is, by œdema of the glottis. I have seen some cases of this kind lately in the hospital. In scarlatina the larynx has become affected. Acute inflammation of the glands of the mouth, and of the cellular tissues about the throat, sometimes extends to the larynx. Erysipelas seems to affect the throat in a great degree, and the glands more than any other part. Erysipelatous inflammation may arise either from the external parts alone, the internal parts alone, or both. In the case of scarlatina, it is an inflammation of the tonsils. There is in many of these cases (where there is inflammation in the sthenic form) some pain and swelling, and likewise irritability, and violent convulsive

paroxysms of cough, in the attempt to swallow. That I mentioned, as rather distinctive of the sthenic form; but where it occurs, in connection with erysipelas or scarlatina, it may occur in the asthenic form, and the reason of this is traced distinctly to the epiglottis being affected. In cases of mere œdema of the glottis, you see that the epiglottis does not appear much affected in the action of swallowing. There is another cause that sometimes produces œdema, and that is aneurism of the aorta, or of any of the large vessels in the upper part of the chest, preventing the passage of the blood to the upper parts. This is a case of dropsy. It is mere œdema of the glottis, and not of the larynx, but it has similar effects, and, in some cases, the glottis is considerably swollen, and it causes death. Sometimes death is caused by a contraction of the glottis from nervous causes. Laryngitis is, as I have said before, more commonly a disease occurring in adults, and it generally, in the acute form, occurs from cold. It does not occur in children, in whom the analogous disease is called croup, and is distinguished by another pathological character. In scarlatina and other affections of the same kind, there is sometimes considerable swelling of the external parts.

The morbid anatomy of this disease consists in the greatly inflamed state of the mucous membrane of the larynx generally, and more particularly the cheeks of the glottis; the ventricles are likewise much distended, and the cellular tissue underneath is likewise often infiltrated. This infiltration consists of serum, or lymph, or of both; and if the disease goes on long there is pus formed, just as in other cases of inflammation accompanied by the effusion of lymph tending to the formation of pus. There is very often lymph effused externally, and there is this difference between the laryngitis of adults and that of children. In adults there is little or no lymph effused externally, and you very rarely have ulcerations in the acute form. The difference in the asthenic form is, chiefly, less redness, less appearance of inflammation, and on cutting into the thick texture, there is found nothing but serum. However, I have mentioned that in some of the asthenic forms, those arising in connection with erysipelas and sometimes scarlatina, there may be lymph and even pus.

The diagnosis of this disease is important, and we must notice the signs by which it is distinguished. The sound in inspiration is noisy, croaking, and is prolonged much longer than usual: there is a sensation of fullness and constriction in the throat and a loss of voice, shewing that the larynx is often deeply affected. The cough may be of a different character; it may be long, shewing that the constriction may continue, and you have to distinguish it from other cases of dyspnœa, those occurring in diseases of the chest. Here you have to examine the chest and determine the presence of laryngitis or the presence of disease in the chest. An abscess in the neck may sometimes press on the larynx or glottis, so as to cause difficult breathing—stridulous breathing. This is determined by the amount of swelling in the neck and pain; so likewise, where there is abscess of the neck, there may not be any redness of the fauces, as is generally the case in acute laryngitis. Spasm of the glottis sometimes comes on suddenly, and is to be chiefly distinguished by the fever accompanying it, heat of skin, and the more gradual coming on of the difficult breathing. The laryngitis is aggravated by the supervention of the spasm. Spasm of the glottis is a rather rare disease, and when it does occur it may be from nervous causes; it occurs in hydrophobia, and in hysterical females it is not uncommon. I have seen not one or two merely, but a great number of patients treated most severely, and brought under the influence of mercury until their frames have been shaken to the foundation, merely for hysterical spasm of the throat. We shall by-and bye come to speak of hysteria, and then point out some distinct mode of treating such cases. The prognosis of this disease is of very serious importance. The severe cases of laryngitis, more particularly of the asthenic variety, are among the most fatal of diseases. An eminent French physician describes as many as seventeen cases, in which only one recovered; but in the first place, you must remember, some considerable time ago this disease was little understood—and, in the second place, in France, most practical men will allow, the practice is far less successful than in this country. In another instance, out of 20 cases collected, 10 recovered. The disease is, however, very serious in all cases, and death takes place between one and five days.

The prognosis is unfavourable in both species, but it is often more so if the disease has lasted long, with a progressive increase in the symptoms. Under these circumstances, there is less chance that remedies will arrest its course in time to stop suffocation. When the symptoms of asphyxia come on, the danger is most imminent—death is approaching. The indication in this disease is a return to freer breath, and more particularly freer expectoration.

With regard to the treatment, I really think that in no disease is energetic treatment more essential than in acute laryngitis. Delay of a few hours may seal the fate of the patient; the great reason of this is, that the period at which active treatment can be applied, is a very short one. Blood-letting should be applied at the very outset of the inflammation, before the strength is at all impaired, and before the symptoms of asphyxia begin to shew themselves. But if it is delayed until the difficult breathing becomes intense, it removes the muscular power by which the patient struggles against the disease. It is of the greatest consequence, therefore, to apply it as early as possible. It is only at the early period that blood-letting will stop laryngitis. Where the inflammation extends, for a few hours, to the complex texture, blood-letting is not the only remedy to remove its products. There is matter already produced, and, for this, other agents are required to remove them. Antimony and calomel are the chief remedies. Antimony is to be combined with blood-letting at the very earliest stage of the disease. When the disease has gone on many hours, antimony can produce but little effect. Mercury is undoubtedly the most powerful means of removing the products of laryngitis; but, unfortunately, mercury is not so readily got into the system as to affect it, and the patient may be suffocated before enough mercury can be taken to effect the desirable object. It is not possible to be done by counter-irritation. Blisters are of no use; they are too slow in their action. With regard to leeches, their effect is but small, inasmuch as everything should be done at the early stage. Leeches may be applied to the throat, to subdue the inflammation in the early stage. With regard to the manner of practising blood-letting, there have been some fixed rules laid down; and I mention them to caution you against them. It has been recommended that, within twenty-four hours of the commencement of the attack, the patient should be bled to syncope; but, by that time, the patient may be almost dead—and if the state of the patient indicates want of strength, bleeding to syncope will actually kill him. Again, it has been recommended that blood-letting may be applied freely as long as the lips do not become livid, and the strength remains tolerably free, accompanied by coughing and free retching. I think this is generally the very best advice, and certainly the earlier it is done the better. Tartar-emetic, or antimony, I have found useful in many cases. It is objectionable when the patient falls into a state of collapse, or a state of asphyxia, because it will increase it. It may likewise cause the act of vomiting, which is not only inconvenient but positively dangerous; and if fits of dyspnœa be caused, they may prove fatal. The same thing applies to the application of leeches. If vomiting causes irritation of the parts, leeches applied to the tonsils would, from the blood arising therefrom, invariably cause a great deal more irritation. The effect of these different remedies, even used under the best circumstances, may be only to delay, not to prevent. The great aim should be, at the commencement of the attack, to bleed freely, and to give mercury freely. One of the most important rules in regard to laryngitis, is not only to give mercury, but to apply it in time to act. What you have to do under these circumstances, is to give the patient breath artificially, and, though the windpipe is closed by laryngitis, you have to open another door—to make an opening into the trachea. There are a number of examples in which this has proved to be effectual.

With regard to the positive rules laid down as to the time to wait before proceeding to this extreme, Dr. Bailey has said, "wait thirty hours after the onset;" and Dr. Cheyne has strenuously asserted that the rule is injurious, and that you should not wait thirty minutes after the breathing is affected. Now, it is important to be observed that tracheotomy, or cutting into the trachea, or the larynx, seems to be efficacious in proportion as it is employed early: if you wait for the supervention of the extreme stage of the disease, then the result of the operation is extremely doubtful. In the first place, there is generally, in these cases, lividity of the countenance, and the other symptoms of asphyxia, and the patient is very much depressed, though he recovers for a time from the effects of asphyxia: secondly, what is very likely to occur is, that, in asphyxia, the lungs become affected, and congestion of the lungs may turn to pneumonia or bronchitis; and though the difficulty in the larynx is overcome by the air let into the trachea, yet an effusion takes place lower down, and the patient dies. One thing to bear in mind is this—that this operation, easy as it is to perform, does not cure the disease; the laryngitis may go on, and, therefore, it is necessary to use the mercury or some other means, because bronchitis is apt to occur after the operation; more lividity and asphyxia are likely to occur than before, from the entry of cold air into the air-tubes. In many cases of laryngitis, great aggravations are caused by convulsive paroxysms; and it is for this reason that anti-spasmodics, more particularly belladonna, stramonium, and hydrocyanic acid, are found of great use in removing the tendency to the spasm.

Chronic laryngitis is more common than the acute disease, and it is accompanied by a great variety of complaints. When it is merely catarrhal, it causes a permanent hoarseness, and you find that many persons whose occupations expose them to the open air at night, such as coachmen and others, who are subject to all the vicissitudes and changes in the weather, are frequently affected, more than other persons, with catarrhal inflammation. This is a very superficial form, and when it becomes deeper seated, it constitutes phthisis laryngitis. The various affections, connected with this, I shall mention to-morrow.

PRIVATE COURSE OF OPERATIVE SURGERY.

By J. NOTTINGHAM, Esq., Member of the Royal College of Surgeons of London.

LECTURE IX.

AMPUTATION OF THE ARM

may be performed in its middle, or through its upper or lower third according to circumstances: it is most frequently required on account of disease of the elbow-joint, when it is desirable, by way of being sure that we remove every portion of contaminated structure, to commence the incisions sufficiently far from the seat of the malady.

If the circular operation be performed, the proceeding is tedious, but the stump so made is a neat and good one; if the double flap plan be adopted the arm is off in an instant, hence the frequent choice of this method.

The surgeon may stand behind or outside the right arm, inside the left.

THE CIRCULAR OPERATION

may be done with a rather small knife, the size of a dessert knife, with one cutting edge, and towards the point shaped like an ordinary bistoury; having such a knife the use of the bistoury may be dispensed with.

The patient sits on a firm chair or stool, the latter has some advantages over the former, as it allows the surgeon more room to turn himself in.

Suppose the operation to be performed for disease of the right elbow, the diseased joint is encircled by two or three turns of a calico roller; the tourniquet is applied, its pad pressing the brachial

artery against the upper and inner part of the shaft of the humerus; one assistant takes charge of the tourniquet, another of the limb to be removed, the trunk and shoulders of the patient are steadied by the attendants, the instruments and apparatus are at hand, and all minor matters arranged.

The surgeon, now, applies his finger to the wrist and satisfies himself that the circulation is commanded by the tourniquet, he then takes the knife easily and lightly between the ends of the fingers and thumb of his right hand, passes it inside the arm to be removed and with its edge toward the integument; he brings it over the limb to apply it first on the outside, or as much so as he can, the instrument is then carried round the limb in an even circle bringing the termination of the incision to meet its beginning, and by this stroke of the knife which should be done very carefully and never in a hurry, the integument is divided, the surgeon being placed outside the limb.

While this incision is being made, the assistant draws up the skin to be divided, so that enough of it may be preserved, and that it may the more readily give way before the knife.

In the next step the upper border of the incision is rolled over towards the shoulder, the surgeon aiding its reflection by dividing the subjacent cellular membrane with the point of the knife; in a small limb, if this be carried to the extent of about two inches, it will be sufficient, and then the knife may be applied to the division of the muscles, its circuit being the same as when the skin was divided, but the instrument, it must be recollected, must be held in the palm of the hand and firmly grasped by the fingers and thumb, so as to cut completely down to the bone which should be felt upon its edge throughout the whole course; for this being done and the muscles retracted by the assistant, the way is cleared for the saw, which an assistant holds in readiness to be presented to the surgeon the moment he puts down the knife.

The heel of the saw is now applied on the bone, and the surgeon draws it backwards or towards himself, and thus an even little groove is marked in which the instrument begins neatly to act when it is pushed forwards or away from the surgeon, the strokes of the instrument should be straight, gentle, and slow, more especially so as the section of the bone approaches its finish, that it may not be splintered so as to present an uneven surface to the soft parts afterwards to be applied to it; such cautions being attended to, rasping, filing, or scraping are alike unnecessary.

The integument as yet remaining reflected, the arteries are seized with the tenaculum, and tied, care being taken to avoid the nerves and veins.

One end of each ligature is next cut off, the tourniquet removed (having previously been slackened to test the state of command in which the arterial circulation is held by the ligatures) and the reflected skin turned down, the border of which forms the base of something like a hollow cone, the section of the bone being at its apex.

The patient may now be put to bed, the stump supported on a soft pillow covered with a little varnished cloth, an attendant sitting by who places his hand upon it to prevent its being shocked or the sufferer disturbed by spasmodic twitchings of the muscles.

After a couple of hours' exposure of the stump to the atmospheric air it may be dressed, and the divided integument approximated in that line which is intended to be the line of union, and this may be either from side to side, or from behind forwards, as it may seem to fit and apply itself the best when the integument is approximated for the purpose.

A couple of sutures will assist materially in keeping the parts together, besides which three or four straps of Mr. Liston's isinglass plaster should be applied and all further dressing whether of pledgets, *charpie*, lint bandage, cap, or what not, most sedulously avoided as "filthy and abominable."

It will be readily understood that the principal steps of the operation just described are four,

1 Division of the skin.
2 ——————— cellular membrane.
3 ——————— muscles.
4 ——————— bone.

The skin, muscles, and bone, are divided by clean transverse cuts, the cellular membrane is dissected upwards, so as to set a broad fold of integument free, and thus allow the muscles and bone to be cut shorter than the skin.

This mode of proceeding applies to the thigh as well as to the arm when the circular operation is performed.

CIRCULAR AMPUTATION OF THE THIGH.

Suppose it to be done on the right limb; the patient is placed on a narrow and firm table, the pelvis brought to its edge, the lower limbs hanging from it, assistants are required to support the patient behind, to fix the pelvis, which will sometimes glide over the edge of the table, and to take care of his hands and lower limb of the sound side.

One intelligent assistant, now, takes charge of the tourniquet, another of the limb to be removed, the surgeon placed outside the limb applies his knife to it as in the operation last described, dividing the skin by the same kind of sweep of the knife, and carefully measuring the depth of the incision (by that mode of feeling one's way with a cutting instrument, which is not easily described, but which is readily appreciated by those in actual practice) so as to set the integument free, and divide the subjacent cellular membrane without cutting into the fascia or superficial layer of muscles.

The integument is now retracted by the assistant, and reflected by the surgeon, who at this step is engaged in dissecting up the cellular membrane, previous to the second circular sweep of the knife, which is to be effected when the skin is turned upwards to the requisite extent, and this may be done by one bold stroke of the instrument in limbs of small size, by two in those which are very large, after which the saw is applied. In completing the section with the saw, the surgeon will do well to remember the linea aspera of the femur, for after the main part or great cylinder of the bone is divided, the saw in finishing its course with the division of this crista should be slowly, gently, and carefully passed through it, so as to avoid any splintering of its structure.

The arteries being tied, the patient is put to bed as in the other case, and left for a couple of hours to the watching of a competent attendant: the stump is then dressed; if a line of union from behind forwards be attempted, the posterior extremity of it, which of course projects more or less, is pressed by the pillow on which it rests; if the transverse line of union be attempted, the posterior flap may form a dependent bag for pus, blood, and sanies; but if we employ an oblique line of union, we may avoid some of these inconveniences. Sutures, and the isinglass plaister are required; all piling on of numerous and heating dressings is to be avoided.

CIRCULAR AMPUTATION OF THE FORE-ARM.

We should take care how we choose the locality for this operation, for it is not equally easy at every point of the fore-arm as might by possibility be supposed; the fore-arm is thick near the elbow, small near the wrist, and towards the middle of it, especially in very muscular individuals, it becomes small, if we may be allowed the expression, all at once. Sometime ago I was present at a circular amputation of the fore-arm in a strong muscular man, where the circular or first incision of the integument was made immediately below the sudden narrowing of the limb, but the surgeon on attempting the reflexion of the integument found himself very much embarrassed. But, why?—Why, because a circle of two inches in diameter would not turn over another circle of 3 inches in diameter—a matter which is certainly in no way astonishing.

In this case the operator found that he could not reflect the skin towards the elbow as he could have wished without violently stretching it, so that he was obliged to divide it on each side and thus convert the circle of integument into two flaps; this sort of accident is not likely often to occur, but is is, perhaps, worthy of notice and might even be met with in attempting to perform the circular amputation of the leg immediately below the calf.

In the practice of the present day it is customary to save but a short piece of the leg in amputations of that part; the contrary, however, should obtain with regard to the fore-arm, a long portion of which may be of great importance, securing to the patient the advantage of some of those rotatory motions of the radius which with the aid of mechanical contrivances will enable him to employ the stump as an useful organ of prehension, for although by well adapted apparatus a something to fill the coat sleeve may be given, nothing artificial can supply the beauty or utility of the elbow-joint and of the parts which enter into its composition to the sufferer who happens to have lost them.

I performed the circular amputation of the fore-arm a little while ago in a case of accidental injury destroying the wrist joint; a narrow knife was turned round the arm, about three inches above the wrist by which the skin was divided; it was then turned up, the knife was then carried through the muscles to the bones around the limb, it was next passed between the bones, and its edges directed to each so as to clear the way for the saw which was next applied and the injured hand removed.

Previous to the sawing, a three ended retractor was applied, to draw upwards, and cover the upper aspect of the soft parts already divided; the case was treated in the usual way and did well. Generally speaking the method of performing the circular operation higher in, the fore-arm may be regarded as similar to the plan adopted in the operation just described; where the muscles, however, are large, they may require two turns of the knife for their complete division, and here it may be remarked that in the fore-arm and leg, where we have to pass the instrument around two bones instead of one as in the arm and thigh, it is better to regard the circuit of the knife, as consisting of four parts, or lines corresponding to the external, internal, anterior, and posterior aspects of the member, and to give to it on each of these aspects, the application and pressure it requires, for the complete division of the muscles and tendons met with. In amputating the fore-arm near the wrist, unless the catlin be well tempered and good, its edge is quickly lost upon the hard tendons there to be divided, and we mention this not only for the sake of giving a hint respecting the quality of the instrument, but also at the same time to say that these tendons are apt to roll under the edge of the knife, which requires to be applied to them with care and firmness.

SOME PARTICULARS OF A POST MORTEM EXAMINATION OF AN EXTREME AND LONG STANDING CASE OF ATROPHY IN THE ADULT.

By CHARLES CLAY, Member of the Royal College of Physicians, London, &c. &c., Lecturer on Medical Jurisprudence, Manchester.

I was specially requested a few days ago to proceed to London to make a *post-mortem* investigation of a lady who had died after a long standing atrophy, producing an almost unexampled appearance of emaciation, a few particulars respecting which cannot but be interesting; as they will, I hope, tend, in some measure, to improve our ideas at present existing as to the cause, as well as to the treatment, of this very mysterious and hitherto uncontrollable disease. The lady in question had previously lost a sister in all probability from the same disease, who was reduced to the extreme of emaciation; and when she found herself in a similarly hopeless condition, having a very superior mind, and being seriously impressed with a sense of duty to the remaining branches of her family (as well as others that might be similarly affected) it was her earnest desire that a *post-mortem* inquiry might be instituted in her own case after death. Numerous had been the medical opinions given on this case and a variety of means adopted as curative measures, until it became a matter of extreme perplexity to the invalid, as well as to her family connexions, how to act for the best. Several years ago I had seen this case, and pronounced it as my decided opinion that the disease was in the mesenteric glands, which were enlarged to such an extent as to prevent all (but a very trifling portion of) the chyme from passing through their structure, and that the disease, if not checked, would continue to progress until the glandular obstruction was complete, when the patient must inevitably sink. As such cases sink very gradually, every part of

the system being generally very healthy, with the exception of the small glands of the mesentery, though suffering but little pain, the prospect was nevertheless a melancholy one,—from the little advances made in medical science in respect to the cure of this disease: but one likely to occupy a considerable space of time for hope and despair to be exercised. At the time I was consulted I advised the following treatment:—That the system should be slightly and rapidly affected with mercury, repeated (after intervals sufficient for the effect to go off) for three or four times, or more, if found necessary. The time during the intervals to be occupied by the exhibition of mild tonics, combined with small doses of the tinct. iodine, gentle exercise, change of scene and air, with a well regulated diet, and sufficient space between the times of taking food, to give rest to the stomach. This opinion as to cause and treatment, was so very different to all previously given, that it was not immediately acted upon. The lady subsequently getting worse came down to Manchester, and submitted to the plan above suggested, under which she gradually improved, and returned home very much better; pregnancy took place, which ended in abortion at the seventh month. The system again suffered from the progress of the glandular disease, and, if any thing, more rapidly, which continued up to the time of death. From first to last the disease had existed six years. Independent of this my opinion of the case, it had been pronounced an affection of the liver, by others the mucous coat of the intestines was considered the seat of disease, others again regarded it as dyspepsia, and even phthisis had been supposed to exist. I must confess I felt very desirous of knowing which opinion had been right, and was much gratified to find I had been selected to make the necessary examination after death. In the presence of Dr. Southwood Smith, and another gentleman, I examined the body on the 24th April, 1843. The appearance of the body was that of the most perfect emaciation I had ever witnessed; and it was a matter of surprise to every one present, how the human system could maintain the vital spark so long in such an attenuated form. The corpse measured five feet eight inches, and presented the outline of a fine woman, which she had been, yet the weight was not more than forty pounds; it appeared more like a skeleton covered with thin leather, with scarcely any substance intervening. I have often seen an Egyptian mummy of a thousand years old quite as fleshy looking. Dr. S. Smith observed such extreme emaciation could not exist in pure phthisis; in fact during life there was not, in my opinion, a symptom of that disease, with the exception of emaciation. Before I proceeded to examine the body, I stated to Dr. S. Smith the opinion I had given on the case as stated above, and that I had seen no reason for altering it. Dr. S. Smith thought it not improbable, but inclined to the opinion that the mucous coat of the intestines would prove the seat of disease. I now laid open the abdominal region, and may observe as a confirmation of the emaciated state of the body, that the forward curve of the lumbar vertebræ formed the most prominent part of the umbilical region, and the integuments were stretched tightly over the abdominal region. The integuments were remarkably thin, the adipose substance was nearly absorbed, whilst the abdominal muscles were only just perceptible, and of a purple colour. The whole body was nearly deprived of blood,—indeed, whatever part was cut into, even the viscera, not a drop of blood escaped from the cut surface, and the whole investigation was completed without any appearance of it. Within the abdominal cavity about eight ounces of serous fluid were found lodged in the basin of the pelvis. This effusion had probably escaped from the exhalents immediately preceding death. Scarcely a trace of the omentum could be found, and with the exception of the kidnies and bladder, all the viscera had partaken of the same waste as the general system. The kidnies, however, and bladder appeared large only when compared with the rest, having apparently suffered no diminution, still they were not larger than usual for an adult. The liver was cut into, and though small, was perfectly healthy, and the gall bladder filled with healthy bile, with no obstruction of its ducts. The stomach had not a capacity for, nor would contain, more than four ounces of fluid; the coats were of the usual thickness, healthy, and no stricture either at its entrance or outlet. The intestines were examined from the stomach to the rectum, but no trace of disease was discoverable, either in their inner or outer coats; in fact, to be brief, the whole organism of the body, though much emaciated, presented not the slightest appearance of disease, with the single exception of the mesenteric glands, the whole of which, numerous as they are, were very considerably enlarged, most of them occupying a circular or oval space of half an inch or more in diameter; indeed, three or four were observed nearly an inch long, and half an inch in breadth, and when the mesentery was extended, and placed between the eye and the light, it had the appearances of large ink blots on nearly transparent paper: so great a disorganization of these naturally small glands must have completely obstructed the passage of chyme, and consequently the formation of chyle for the due nourishment of the system. Here, then, as I had long anticipated, was the sole cause of death, which had accomplished its object in the most gradual, but effectual manner. The appearances exhibited in this post mortem examination led me to reflect on the strong analogy existing between mesenteric disease of adults, and the marasmoid affections of young children, (an equally stubborn disease;) and it was in consequence of the frequent success I had had in the treatment of marasmoid affections of young children, that I wished to treat adult atrophy on similar principles, and though I have not had opportunities sufficient to establish it as a practical fact, yet I have seen sufficient improvement in the few cases I have had an opportunity of testing, to be convinced, that adult atrophy is a manageable disease if taken in time, and properly persevered in, but unfortunately it is a disease of long standing, and the progress of cure (*where it can be secured,*) is at best so slow, that few invalids have patience to adopt, or persevere in means for a continuance sufficient to effect the purpose, but are rather disposed to seek for a variety of opinions in the vain hope of securing some more rapid means of assistance, (a plan that invariably defeats the object in view.) It is plain that in mesenteric affections, we cannot reasonably expect to do any good except by setting up a new action in the system. I have effected this in marasmoid children by extremely small doses of mercury rapidly given, so as to produce a slight effect on the mouth; this plan I would adopt in atrophy, repeating the same three or four times if necessary, after sufficient intervals of time to allow the effect to go off. The interval should be occupied by the exhibition of mild tonics, combined with small doses of tinct. iodine, easily digested food of the farinaceous description, gentle exercise, with change of air and scenery; in respect to food, it should only be taken at stated times, allowing the stomach three or four hours rest between food, which is imperatively necessary for the well doing of the patient, as I am convinced the constant pecking of food at all hours debilitates the stomach by its never resting action; a host of bad symptoms arise in consequence. I have already said this plan has been eminently successful in marasmoid affections, as well as in mesenteric disease of the adult, so far as I have tried it. In children I should be inclined to dispense with the iodine, if the disease was not of long standing and of an aggravated character. There is, however, another auxiliary which I have reason to believe has had a very considerable share in promoting the cure in such cases,—viz., the tepid bath for the body up to the shoulders every other night, with a small quantity of Spt. Terebinth in the water; this has always been very beneficial in marasmoid children, in consequence of which I have used a liniment with a large proportion of the Spt. Terebinth to the abdomen in atrophy, but think the bath would be more effective in both diseases, and should consider it imperatively necessary in the treatment of atrophy. As constipation will probably manifest itself, as the system progressively improves, I should advise all strong purgatives to be rigidly avoided; as a simple solvent of fœcal matter, I think the Fel. Bovi. inspiss. grs. viij. in two pills, best calculated to effect that object without irritation. The peculiar effects of this remedy I have already treated on at length in the MEDICAL TIMES, vol. vi. page 100. The views I have here put forward in respect to mesenteric disease, and which the present *post mortem* inquiry so fully corroborates, I have for some time entertained and adopted—as will be seen by reference to numerous papers of mine on mesenteric diseases, (*Lancet*, vol. 1, 1841-42, page 3,) and on small doses of mercury producing ptyalism (*Lancet*, vol. 2, 1840-41, page 751.) I now leave these brief observations to the consideration of the reader, hoping they may excite attention in similar cases (which are admitted by all as very stubborn), and but little known hitherto in respect to their treatment. Under such circumstances, any suggestion is valuable if it has a tendency to improve the plan of treatment; I have confidence in the mode proposed, and desire for it an impartial trial. The mercurial preparation which I have been in the habit of using is Hydr. c. Creta grs. iij, Calomel, gr. $\frac{1}{8}$th, given as frequently as the bowels will admit without purging, and until tenderness is produced.

MEDICAL REFORM.

THE members of the North of England Medical Association held their anniversary meeting on Wednesday the 26th inst., at Sunderland (Dr. Headlam, President of the Association in the chair.)

Dr. Headlam proceeded to address the meeting on the present state of the medical reform question. Considering (said he) that the evils which hung on the profession were well known to those he addressed, and to the public—considering also the frequent appeals which had been made to the public, and the many applications to Parliament praying for redress—it might seem a matter of surprise that no measure had yet been brought forward which had received the sanction of the legislature, or which seemed to deserve its sanction. Notwithstanding this, he was confident from what he had observed, that the cause of medical reform had advanced, and was still progressively going on. (Applause.) The success of any measure, however, must depend upon the effect produced on public opinion. He believed this effect would be produced in time. It was impossible that in the discussion of a question which interested the whole community more than it did even the profession itself, they should not, by the force of truth, and the justice of their cause, eventually make an impression on the public mind—which impression, when once it was made and sufficiently extended, would become irresistible. (Applause.) Already he perceived the members of the profession were clearer in their views of medical reform, more convinced of the importance of legislative interference, and more united as to the principle on which medical reform should be based. But, at the same time, he must remind them that they had no very powerful means of giving an impulse to public opinion—they had amongst them, thank Heaven, no party, no political feeling. (Applause.) He was satisfied, however, it was only necessary to pursue a steady course—to continue to make their appeals from time to time, to the public and the legislature, stating the evils that beset the medical profession—it was only necessary to pursue this course, in order to convince thinking and reflecting men, of all classes in society, that it was essential to the interests of the public that medical reform should be established. The profession had no selfish views, no private interests to promote: they were simply actuated by the honourable motive of upholding the dignity of their profession, exalting its character, increasing its usefulness, and benefiting more extensively the community of which they formed a part. (Applause.) Their first object was to promote medical education; and here he would call the attention of the meeting to the importance of contending for a high standard of education, preliminary and professional. In a letter recently published by an eminent physician, Sir James Clark, the writer had dwelt upon this point, and taken very sound and rational views;

and he hoped the profession would all contend, that, in any measure to be adopted by Parliament, a candidate for a license to practice should in the first instance be required to possess great attainments in literary information. His education should be that of a scholar and a gentleman. By making this imperative, the character of medical men in society would be raised, and they would be enabled to pursue their scientific researches with more advantage. It was now generally admitted, with regard to professional education, that it should embrace every branch of practice, and that a license should be given to those only who had made competent attainments both in medicine and surgery. This was the first important step—he should almost say, the only essential one, at the commencement. The public being protected by a uniform and competent education of medical men, and a registration of licensed practitioners, every one would know where to apply with safety in sickness and in suffering. But if a measure of this kind were once granted, it was self-evident that men of talent and genius—men who had had great opportunities of study—would aspire to higher rank in their profession. They would seek to distinguish themselves by further study, and by confining their attention in particular to one branch of practice. Degrees and distinctions must attend such enterprise. It would be the duty of the legislature to foster such exertions, and to secure to individuals the rewards to which their protracted study entitled them. It would be also necessary that public bodies, who possessed the right of granting degrees, should be compelled by the legislature to have a distinct, uniform course, both of study and examination; and a degree thus obtained, would be a valid and not a nominal one merely. The legislature ought further to provide, that medical men should enjoy the exercise of their privileges equally in every part of the kingdom. They should also be protected from disreputable and mischievous interlopers. At present, there were many eminent men in every branch of the profession, who had been stimulated by their own enterprise to possess themselves of every qualification, yet they were beset on every hand by men who had entered the profession without any such recommendation. (Hear, hear.) It was the duty of the legislature to prevent those who were worthy from being mingled up with the illiterate, ill-informed charlatan, who too often obtained that confidence which ought only to be placed in a well-qualified person. He did not think it necessary to direct the attention of the meeting to what must necessarily follow from the recognition of the principles which he had laid down, either as it respected the constitution of medical boards, or the influence they would have on medical practitioners, because these measures must necessarily accompany the changes adverted to. If they once obtained what he had recommended, the subsequent details would be quite easy. He had now only to ask the secretary to read the report which had been prepared under the authority and with the concurrence of the Council. (Applause.)

Mr. C. T. Carter, of Newcastle, the Secretary of the Association, read the following Report:—

A period of nearly three years and a half has now elapsed since the formation of this Society; and during that period, five Reports have been submitted to general meetings. In presenting a sixth, the Council have the gratification to announce the unabated prosperity of the Association during the past year. Notwithstanding the great distance at which many of its members reside from the more immediate scene of its transactions, the little opportunity they must of necessity enjoy, from one anniversary meeting to another, of learning the nature of its proceedings, and the difficulty (in some cases the impossibility) they must experience in attending those meetings, it is satisfactory to find that they continue to yield their support to the several objects for which it was instituted, evincing thereby a degree of zeal on behalf of their common profession well deserving of applause and imitation.

The first and foremost of these objects has ever been, to assist in procuring such a legislative reorganization of the profession, as shall be adapted to the circumstance in which it is at present placed—not only in reference to its own members, but to the interests of the community at large. In the pursuit of this object, the hopes of the medical body have been alternately flattered and disappointed; and it has been the duty of your Council to report, from time to time, the failure of every attempt which has been made within the last few years, to legislate upon this difficult and complicated subject. Under these circumstances, it is not surprising that some gentlemen, who joined this Society in the sanguine expectation that the unsatisfactory state of medical affairs was to be rectified at once, should have become disheartened, and that, despairing of success, or doubtful at least of the utility of their individual aid, they should have deserted the ranks of the Association. But it is satisfactory to know, that if some have withdrawn themselves, there have been others ready to supply their places, and that, in spite of every discouragement, the Association has steadily kept its ground. Some who stood aloof at its formation, either from misapprehension or mistrust of its designs, have, now that time has been allowed for their development, enrolled themselves amongst its members—considering properly, that although the assistance of any one man may avail but little in the correction of evils and abuses, it should nevertheless be added to the general effort. And this, in fact, is all that is required: let the number of those who are willing to aid the cause of professional amendment, by never so little, be converted from hundreds into thousands, and that cause must, at no distant period, be crowned with abundant success. Let no one give way to despondency on account of the delay which *must* take place before the arrival of this period. Impediments and hindrances should serve but to exercise patience, and excite to renewed exertions.

Your Council deem it unnecessary to dilate on the good results which are likely to ensue from Associations such as this. It is impossible that such bodies should not exert a considerable moral influence, both upon the profession and the public. Upon the former they are calculated to produce effects which cannot fail to secure the increased respect and consideration of the latter; and it should never be forgotten, that the interests and well being of each are inseparably connected, and that the medical body can seek no improvement of its own condition, which would not be productive of beneficial consequences to every class and grade of the community. Members of the profession should not be disappointed if the progress of improvement be slow and almost imperceptible. The ordinary avocations of medical men are of an engrossing character, and are liable to interfere with that frequent intercourse which is requisite to the carrying out of any concerted scheme or line of action in affairs not immediately connected with the practice of their art. Your Council have to regret, that, from this circumstance, it has been found difficult to give to many topics of interest that full and careful consideration to which they are entitled; and in resigning their functions, they would take the liberty of suggesting to their successors to consider, whether, by the appointment of Committees on individual subjects, or by some other means, this disadvantage may not in future be obviated, or at least, materially diminished. The inconvenience of frequently bringing together members of this Association, scattered as they are over three extensive counties, induced the Council, some time ago, to recommend, and the Association to resolve, that, except for special and extraordinary purposes, there should be but one general meeting in the year. This arrangement was accompanied by a strong recommendation in favour of sectional subdivisions and meetings, as a means of fulfilling more particularly some of the second class of objects contemplated by the Association. Such local unions might be rendered useful in a variety of ways, which will readily occur to every mind; as in promoting harmony and community of feeling—in cherishing a due observance of professional honour and etiquette, in discussing and arranging matters of mutual interest, in affording mutual protection, and, in towns where there is no Society established for that purpose, in advancing medical literature and science.

In reference to medical legislation, the last year has been one of expectancy rather than of action. The profession has been awaiting the introduction into Parliament of the Bill announced by Sir James Graham in the early part of last session. From the peculiar nature of his office, it has been considered that on no one could the responsibility of such a measure rest with so much propriety as on Her Majesty's Secretary of State for the Home Department, and that in no hands could the carrying of a Medical Bill through Parliament be so certain of success. It has been imagined, moreover, that in undertaking a task of so much complexity, and involving so many interests, both public and professional, the Minister would feel it his duty to avail himself of all those sources of information which are peculiarly open to the Home Office; and that in deliberating on this momentous question, the *general good* would be the paramount consideration.

Your Council regret, that although two separate applications have been made for the purpose, they are unable to submit to this meeting any official outline of the anticipated Bill of Sir James Graham. From what they have been enabled to glean of its contents, they are induced to believe, that its provisions are, or *were*, not widely different from those which, upon surmise, they ventured to criticise in their last Report; and it is needless to say, that if such be the case, the Bill, how acceptable soever it may prove to certain parties in the profession, cannot fail, in several most important particulars, to disappoint a great numerical majority of its members. Your Council by no means wish to affirm that some parts of the Bill, as reported, would not be productive of good, nor constitute improvements on the present system. If rightly informed, it would tend to promote an incorporation of the physicians of each country, and a uniform standard of qualification for medical degrees. Upon the justice and propriety of such an arrangement, the opinion of this Association has been repeatedly expressed; and it is gratifying to know, that a growing inclination in its favour has of late years been exhibited by most of the Universities and Medical Colleges of the United Kingdom. As a natural consequence of uniformity in the conditions attached to the granting of medical degrees, the restrictions which have hitherto prevailed with regard to the right of practising in particular districts, would be removed; the power now held by the Royal College of Physicians of London to examine for its license the graduates of British Universities would be withdrawn, along with most of those questionable parts of its constitution which have entailed upon the College so much unpopularity, and occasioned so many undignified conflicts between the different classes of its members. The Executive Body of the College of Physicians, it is also supposed, would be no longer self-elected but chosen by their respective commonalties—the latter being made to comprehend all the legally recognised physicians of each country. The Colleges would thus serve as Courts of Records for Medical Degrees, and their registers would probably be the means of detecting and exposing parties who should usurp the title of M.D., or hold it merely in virtue of a purchased continental diploma.

The bill, it has been supposed, would also tend to promote something like uniformity in the education of the general practitioner, and would enforce a double qualification on all who should hereafter receive a license to practise as members of that branch of the profession. Such an arrangement is not only expedient but necessary. There is at present no greater evil in the profession than that arising from the unfair competition caused by the dissimilarity of qualification which prevails among general practitioners, and, in consequence of which it happens, that while some parties, in order to qualify themselves for general practice incur the labour and expense of completing the separate curricula of study, and submitting themselves to the separate examinations required for the diploma of the College of Surgeons and the license of the Society of Apothecaries, here are others, acting in a similar capacity, who have subjected themselves to the ordeal of *one only*

of these Boards—an injustice which will be instantly apparent, when it is remembered, that the former body institutes no inquiry into the *medical* knowledge of candidates for its diploma, while the latter takes no cognizance of *surgery* in the course of study and examinations which precede the granting of its license.

It is said that the Bill of Sir James Graham would require all future English practitioners to be examined in some departments of medical science by the College of Physicians, and in the remainder by the College of Surgeons. The hall of the Apothecaries' Company would be no longer the scene of medical examinations. Some of its members would, however, assist in the examinations at the College of Physicians, and the license of the Company would be taken as heretofore by the general practitioner. This arrangement appears to your Council to be one of the most objectionable parts of the Bill, and would almost serve to indicate the parties by whose advice its right honorable framer would seem to have been actuated in its construction. If the general practitioner is to be no longer examined by the Company of Apothecaries, why should he continue to receive his license from that Company? If his examination is to be conducted jointly by the Colleges of Physicians and Surgeons, under such regulations as shall be approved of by a General Board or Council, why should not his license be granted by that Board?

It might have been imagined that in legislating anew for the medical profession, an opportunity would have been taken to rectify the error committed by the Metropolitan Colleges in the year 1815, and to atone for their supercilious disregard of that numerous and useful body of practitioners, whom they, in that year, consigned to the care and keeping of a "City Guild and Trading Company of Apothecaries."*

Your Council do not mean to assert that the Apothecaries' Company has not endeavoured faithfully to discharge the functions which, through the supineness of the Colleges, and even in opposition to its own wishes, it has been called on to fulfil. On the contrary,, they willingly admit that much success has attended its exertions. The gradually increased amount of qualification now required of the general practitioner, is unquestionably to be attributed to the Apothecaries' Company. Not unmindful, therefore, of its services, and with no feeling of disrespect, the Council are yet of opinion that the control of medical education and the licensing of medical men should not have been entrusted to this Corporation, and that, under a proper sense of duty on the part of the Colleges of Physicians and Surgeons, and a right understanding of the case by the Legislature, such an office would never have devolved upon the Society of Apothecaries. They are persuaded, that in consideration of his acquirements, and the position at present occupied by the general practitioner, both in society and the public confidence, he should cease to bear the stamp of an *apothecary*, he should no longer be identified with a functionary now all but obsolete: his authority to practise the *profession* of Medicine should no more emanate from a *trading* Company.

It is affirmed that a new order, to be entitled "*Fellows of the Royal College of Surgeons*," is to be created, which your Council suppose will consist chiefly or entirely of that class of practitioners who may be desirous to limit their practice more particularly to the surgical branch of the healing art. The "*Fellows*," it is believed, are intended to constitute the electoral body of the College, while the *members* or general practitioners will have no voice in the election of its officers, or in the management of collegiate affairs. From the Councils of the Colleges of Physicians and Surgeons of the three countries, are to be chosen the medical members of a Central or General Medical Council, to which is to be confided the superintendance and control of the entire profession. As to the propriety of a General Council there can be no question. Its efficiency, and the respect in which it shall be held by the public and the profession, must of course depend in a great measure on the materials of which it may be composed. If the foregoing surmises be correct, the Council will be little else than an offset of the Metropolitan Colleges; and as the mass of practitioners has been systematically disregarded hitherto, so now, according to the reputed Bill,would they be excluded from all control or influence over the medical polity of the United Kingdom. Coincident with the latter circumstance, the principle of PROTECTION, which is clearly recognised by the Apothecaries' Act, but which, from the inappropriate and defective character of the details of that measure, has been too feebly acted upon to suppress a small amount even of the unauthorised practice for which this country is notorious amongst the civilised nations of the world—this principle, it appears,would be exchanged for a species of negative restriction, or, in other words, a DISCOURAGEMENT of unqualified pretenders to medical knowledge and surgical skill—a discouragement which your Council have reason to believe, and which an adequate acquaintance with the actual state of medical practice throughout the land, especially in rural districts, can hardly fail to demonstrate, would oppose but a feeble barrier to the cruel, dangerous, and fraudulent practices of ignorance, cupidity, and imposture.

Members of this Association are probably aware, that towards the close of the last session of Parliament, Sir James Graham said it was in contemplation to propose the immediate granting of new Charters to the College of Physicians and Surgeons of London, and the subsequent introduction into Parliament of a Bill for the regulation of the medical profession in general. Your Council, thinking that the granting of such Charters would prejudge the general question, petitioned both Houses of Parliament that they would not sanction such a proceeding, but withhold their support from any Charter, until the whole subject of medical affairs should be brought before them. The Council took steps for insuring the presentation of similar petitions from Newcastle, Gateshead, Durham, Carlisle, Sunderland, North and South Shields, Berwick, &c., copies of petitions having been transcribed and sent for signature, to those places—Members of Parliament being urged at the same time to support their prayer. After the lapse of a few days, Sir James Graham, in reply to a question put to him by Mr. D. Barclay, M.P. for Sunderland, declared that he had abandoned the idea of proposing the Charters during the session of 1842. Medical Legislation having thus been once more postponed, and your Council in reply to a recent application, having been informed that the Bill of the Home Secretary was not sufficiently matured to admit of an *outline* being submitted to their inspection, it is sincerely hoped that the interval may have been employed in framing a measure more suited to the exigencies both of the public and the profession than the *reported* Bill of 1842 could have been capable of supplying. The proper regulation of the medical profession is a matter of vital importance to society at large: its interest is not limited to medical men alone, as is too commonly supposed; and on this account it is most earnestly to be wished, that any measure having reference thereto may be carefully and attentively considered, and with a view, not to favour the designs of any particular party or institution, but to benefit the whole community. It is a question involving the safety and comfort, not of the living only, but of millions of yet unborn subjects of the British empire and its vast dependencies; and the statesman who shall be instrumental in placing this important branch of national polity on a proper basis, will have thereby earned for himself the admiration and gratitude of his country.

It would be a work of supererogation to revert on the present occasion, to the principles of Medical Reform, which have been advocated by this Association, seeing that they have been so frequently explained in five preceding reports. It is a source of gratification to your Council, that those principles should have been steadily gaining ground, and that they should be identical, or nearly so, with the opinions promulgated by some of the ablest men who have directed their attention to the subject. They have been supported by the estimable Professor of Medicine in the University of Oxford (Dr. Kidd), and by the late venerated Professor of Anatomy in the University of Dublin (Dr. Macartney). They have been urged, through a long and honorable career, by Dr. Barlow, of Bath. They have been enforced by Dr. Thomson, late Professor of Pathology in the University of Edinburgh—by Sir James Clark, Mr. Carmichael of Dublin, Dr. Marshall Hall, Dr. G. Webster, Dr. Forbes, Dr. Grant, Mr. R. D. Grainger, and many others, among whom it is but just to mention the name of one of the Vice Presidents of this Association, Mr. Greenhow. Without wishing to make invidious distinctions where praise is due to all, your Council cannot refrain from expressing the great pleasure they have derived from a perusal of the letters addressed to Sir James Graham by Sir James Clark. To this eminent physician the thanks of the profession are justly due, for his able advocacy. Occupying a foremost rank in his own department of practice, Sir James Clark has boldly stepped forward to advocate the improvement and amelioration of the *whole* professional body; and while he maintains the expediency of divisions of medical labour, (which few indeed, if any, have denied,) and the persistence of the distinctions and grades already recognized in the profession, he claims for *all* practitioners a good and sufficient education, both preliminary and professional, an equal legal recognition of all, and the enrolment of *all* in "one great corporate institution." Sir James Clark is of opinion that there should be but one prescribed course of medical education exacted by the STATE—that it should comprehend what is necessary for every medical practitioner, and should be the same throughout the empire. They who would prognosticate from such an arrangement the annihilation of prevailing divisions, distinctions, and honorary titles, may derive some alleviation of their fears from the following extract:—"Whatever department of the profession (observes Sir James) the medical man may choose as the field of his practice, to practise that part properly, he must be acquainted with the whole. When possessed of such general knowledge of his profession, the practitioner may, by devoting his attention to one department chiefly, be fairly supposed to excel, and generally will excel the man who practises them all. Thus one man, by directing his principal attention to the investigation and treatment of diseases affecting internal organs and the general system—another by directing his chief attention to the diseases and injuries of the external organs, and the operations and mechanical appliances required for their cure—may each attain, in their respective departments, a degree of perfection which cannot be expected of him whose attention is divided among the whole range of human infirmities and accidents. Hence there will always be Physicians and Surgeons, who, in addition to their individual practice, will be consulted by the General Practitioner in dangerous and obscure diseases." The regulation respecting honorary degrees in Medicine, the writer thinks, may be safely left to the Universities and Colleges. "Much," says he in continuation, "has been said of the necessity of requiring high literary and scientific attainments of physicians, in order to secure their high standing and character with the public. Any law for this purpose is quite unnecessary. Insist upon the general practitioner being well instructed, and you at once insure a still higher education for the physician."

Your Council beg to recommend the letters of Sir James Clark to the notice of all who are interested in the subject of medical education or medical government. They trust, moreover, that his example, and that of the other eminent individuals already named, will stimulate the profession to exert itself at the present critical moment; and as a Bill may be possibly introduced during the present session of Parliament, no time should be lost in making known its opinions and wishes to the Legislature, through the medium of petitions. They are glad to perceive the activity which has lately been displayed by the practitioners of Surrey, Worcestershire, Liverpool, and Chichester, and would beg to suggest the propriety of meetings being convened for the purpose of petitioning both in the counties and towns of the United Kingdom

* J. H. Green.

Your Council have prepared a petition, which they take the liberty to submit to this meeting; and if approved, they trust that others of a similar kind will be forwarded from the several towns comprised within the district of this Association. They hope the profession will not rest satisfied with the mere act of petitioning, but that each of its members will feel that something more than this devolves upon him *individually*. There must be few, indeed, who cannot exert some degree of influence, both with Members of the Legislature and the public; and it must never be forgotten, that the progress of amendment has hitherto had to contend with no obstacle so great, as the apathy and indifference of a large portion of the medical body itself.

After the length to which the preceding observations have been extended, your Council are unwilling to detain this meeting with a recapitulation of the several subjects to which, in addition to the all-absorbing one of legislative reform, their attention has been directed during the past twelvemonth. Some of these require no comment, whilst others may be said to remain *sub judice*, and might perhaps with advantage afford scope for inquiry by the Council which will be elected to-day. The Report on Hospital Appointments, read at the last anniversary meeting, has occasioned much discussion at different periods during the year, but nothing need be said respecting it in this place, as the Committee has of late resumed its sittings, and is prepared to submit a second report to the meeting.

Mr. Carter, having concluded the report, proceeded to read a statement of accounts. It was a subject of congratulation, he observed, that the Association was in a prosperous financial condition. At their former meeting in Sunderland, two years ago, they were £16 in debt. Last year, they had a balance in hand of £2 7s. 6½d., which was increased in the present year to £30 1s. 0½d. (Applause,) in addition to £40 due from members in arrear.

Dr. Brown moved that the report be received, printed, and circulated. It did not set forth that much had been done during the past year; but this, the meeting might be assured, was not the fault of the Society, nor of the Council. The fact was, at their last meeting, it was admitted that the position of the Council must be one of vigilance. They were all well aware, at that time, that it was the intention of her Majesty's Secretary of State, Sir James Graham, to bring in a bill; and till that bill was before Parliament they could not do anything; but the zeal of the Council had been manifested by a most diligent attendance at their several meetings. Several of the meetings it was in his power to attend, and the numerous attendance had surprised him. The Council in this respect were deserving of great praise; and though their report, he repeated, necessarily set forth little that had been done, it could not but meet with the approbation of the meeting. It stated, with great clearness and propriety, the injustice and injury that would be inflicted by the supposed bill on a most important class of medical men. General practitioners it appeared, were still to be left in the hands of a trading company. What had transpired respecting the bill, did not amount, certainly, to positive evidence, but information on such subjects *would ooze* out from various channels and he had little doubt that the able report just read proceeded upon the true character of the intended measure. More unsuitable hands could not have been entrusted with the licensing of medical practitioners, than the trading company to which he had referred, or, as it had been designated, a "city guild." To his own knowledge, competent British practitioners, holding the license of this company, had been sorely prejudiced thereby, on going abroad to foreign parts, where an "apothecary" was looked upon with contempt, as a mere compounder of drugs. He knew a gentleman who went to Manilla, carrying with him a license from the Apothecaries' Company, who lost a situation of £2,000 a year, because he had upon him the stigma of a trading establishment. An American practitioner, really less qualified, was preferred to the Englishman. (Hear, hear.) He (Dr. Brown) could not hold out the expectation that the new Council would be able to effect more than the one now retiring from office. They could not be certain that Sir James Graham, amid the pressure of parliamentary business, would bring forward the promised measure immediately, or even during the present session. He was convinced, however, that the Society, in this the fifth year of its existence, had fulfilled the character which it had formerly acquired of being incessantly on the watch to promote medical reform; and he hoped the members of the Council would be instructed to oppose anything in the intended bill which was found injurious or disrespectful to the medical profession, or detrimental to the interests of the public. (Applause.) [Sir James Graham, it will be learned from our parliamentary summary, has this week announced his intention shortly to introduce the bill.]

Mr. Morrison, Pelaw House, Professor of Operative Surgery in the Newcastle Medical School, rose to second the motion. This he did most willingly, for he thought a considerable debt of gratitude was due to the Council for their very careful account of the supposed bill. The statements which the report unfolded, would convince the meeting of one fact, viz., that the corrupt institutions, which it was the desire of every member of the profession to reform, were beginning to look with alarm at the steps taken by the various medical associations, and by the profession at large, and had sought the influence of the government to appease the impatience of the profession for reform; but the extraordinary patchwork which the report of the Council disclosed in connection with the bill, was absolutely an insult to the medical profession. It did not propose in the slightest degree to alter the nature of those institutions which had the power of granting licenses, but merely made a change in their names, or transferred their influence (if he might so speak) from one kind of shop to another. (Laughter.) It was nothing, in his opinion, but an impudent attempt to gull the medical profession. There was one point to which he regretted that the report made no allusion, and on which many persons present might suppose him to be affected with a sort of monomania. The report made no allusion to the imperfect and objectionable law which regulated the anatomy of this country. On a former occasion, the Association had received a promise from the Council, that they would pay their best attention to the subject; but, so far, nothing had yet been done. He could assure the meeting, from information he had received from all quarters of the kingdom, in regard to the working of this measure, the Anatomy Act had not gained upon his esteem. There had not been the slightest indication of amendment in its operation. It was true, other and more competent persons had been appointed to manage the details; but so imperfect and cowardly were the provisions of the act, that the utmost talent brought to bear on its administration, could not remedy its inherent defects; and if it were not amended, and the profession were thus deprived of the very basis on which alone a medical education could be reared, they were neglecting the best means of raising themselves in the estimation of their country. (Applause.) With these remarks, he would second the motion for the reception and circulation of the report, which reflected so much credit on the Council and their Secretary.

[From the *Gateshead Observer*, from which we extract the above, we learn that a petition was agreed to, in conformity with the recommendation we gave a short time since, viz., avoiding any premature condemnation of a bill whose provisions are yet not properly before us, and expounding the principles on which a satisfactory settlement of the question can alone be obtained. The other proceedings presented no feature of a *generally* interesting character.—Ed.]

Acari Galvanici in Ferrocyanuret of Potash.—In one of Mr. H. Weekes', experimental arrangements, commenced early in May last, a voltaic current from a sulphate of cooper battery constantly traversed two separate solutions of ferrocyanide of potash, contained in peculiar forms of apparatus. On the 26th October, a swarm of acari made their appearance from this highly poisonous preparation!

STATISTICAL SOCIETY, April 24.

Thomas Tooke, Esq., V.P., in the Chair

A paper, by Dr. Guy, was read, entitled, "An attempt to determine the influence of the seasons and weather on sickness and mortality." This inquiry was suggested by a striking coincidence observed between the prevalence of sickness and the temperature, in the several seasons of the year 1842. This led to an examination of the bills of mortality for the same year, in which a similar coincidence was observable. From the tables exhibited, it appears that there is no relation, either direct or inverse, between the mortality and varying condition of the air, but that the sickness follows the exact order of the temperature and dew point, varying directly as each of them. The clue thus obtained to a relation existing between the sickness on the one hand, and the temperature and hygrometric state of the air on the other, was then followed up in a series of tables. The first point to be ascertained was, what were the diseases, which, by following in the order of the temperature, might be said to *govern* the law of sickness. These were shown to be the febrile, the catarrhal, and contagious diseases, the disorders of the digestive organs, and the mixed group, comprising gout, scrofula, dropsy, &c. There was no relation found to exist between any other diseases, or classes of disease, and any one condition of the atmosphere, with the exception of the acute diseases of the organs of respiration, which followed the inverse order of those above named, and varied inversely as the temperature and dew point. The next point to be determined was, which of the two atmospheric conditions, the temperature or the moisture, was most influential in producing sickness. It resulted from the tables, that the temperature was the most influential, and that the hygrometric condition of the air, when calculated by the acknowledged formula, had no material effect on the sickness. The second part of the inquiry consisted of a comparison between the results obtained for 1842, and those of former years. The principal results to which the author arrives, may be briefly summed up as follows:—The amount of sickness in the central districts of London during the year 1842, varied directly as the temperature, being a maximum in August, the hottest month of the year, and a minimum in January, the coldest month. The diseases which determined the order of sickness, were febrile and catarrhal affections, the contagious exanthemata, and the disorders of the digestive organs. The diseases of the organs of respiration followed the inverse order of those already mentioned, and were inversely as to the temperature, being most numerous in the colder, and fewest in the hotter months. The hygrometric state of the air appeared to have little effect on disease, and if it produced any effect, it was on the organs of respiration, which were in excess during the months in which the quantity of moisture in the air was the greatest, but these were also the coldest months. The author concluded, by stating it to be his opinion, that the causes of sickness are two-fold, consisting of atmospheric changes which may be submitted to measurement, and of certain more subtle changes in the composition of the air which at present can neither be analyzed nor estimated. To the former class belong the temperature, moisture, and pressure of the air; to the latter, those emanations from the earth or from human beings, which give rise to the majority of epidemic, endemic, and contagious diseases. As the number of cases of sickness produced by the latter causes is generally considerable, the influence of the pressure, temperature, and hygrometric state of the air, will be observed in those years in

which these causes are in operation; but in the absence of epidemics. the temperature will be found to be the most influential cause of sickness. A summer or winter of unusual length, will also cause an increase of sickness, but the nature of the sickness will be different, as the temperature is higher or lower than usual. The order of the seasons, in respect of sickness, will also be mainly determined by the degree in which the temperature of the seasons exceeds or falls short of the average temperature. The mortality, in like manner, in non-epidemic years, will be chiefly dependant upon the temperature, except in those years in which the summer is unusually warm, when the mortality of the summer may even exceed that of the winter season. In other instances, the mortality of the summer months will rank next to that of the winter or autumn.

TO CORRESPONDENTS.

We have received two letters, one of them from a known authority,expressing a high opinion of the clever deductions drawn by Corvinius, and inviting him to a further development of his interesting and important views. The purpose of the letters will be answered, we presume, by this notice of them.

R. F. *favours us with a flattering notice. He states that from the interest of our general intelligence, and other qualities which he flatteringly attributes to us, that our journal should have " a mighty sale," and recommends more activity in assisting its circulation. Our answer is, that we are glad and grateful for any external aid we get for increasing the readers of the " Medical Times," but that its course of progression has been so highly satisfactory, that we do not now feel it necessary to take any extra measures. Our journal, we hope, advertises and " pushes" itself.*

Mr. Smith's *communication has been received, and will be carefully considered.*

M. R. C. S. Pimlico, *sends us a well-written letter, which we regret that our space allows us no room for. He is a Governor of Westminster Hospital, and a member of the House Committee, which he tells us has no controul whatever over the school, which only uses the hospital's name by sufferance.*

A Friend *sends us a reply to Mr. Clendon's vindication of himself from the charge of plagiarism. As a piece of fairness to Mr. Clendon, we think we must require from* A Friend *a public name against a* published *name. By the way we are reminded in reference to* A Friend's *former communication, that our printer spelt forceps* " extracts," *a somewhat odd change when a thought is given to* extraction.

H. R.—*Dr. Clay's pessary may be had, we believe, of any instrument maker in Manchester. We are not aware that it is sold in London.*

Amor Justitiæ *sends us a note testifying to the abuses complained of in the Westminster School, and calling especial attention to the long epistolary correspondence taking place between lecturers, before signing certificates; and to the confusion that reigns in reference to these, in the apartments of a St. Andrew's graduate, Dr. F. Bird, who gets the final charge of them, and of whom our correspondent speaks in extremely offensive and disparaging terms. He asserts that egregious blunders sometimes take place, which put students who are to be examined under old regulations, and* vice versa, *under great inconvenience and disadvantage. The rest is too personal for insertion: it contains no name.*

A. M. *will not get prescriptions from us under what seems to us, from the terms used, a false plea. The married lady should go to a respectable practitioner.*

M. D., Norwich.—*The case presents some points of doubt, but, after maturest consideration, we have the best authority for the assurance that our correspondent cannot recover what is certainly a lawful debt. He had better await the chance of the New Bill, which in that respect may have a* post-factum *operation. We cannot answer the last question sent to us, as the provisions themselves are known not to be finally arranged yet.*

Medwin—H. W., Bristol—Medicus—P. T. W. — A Constant Reader, Exeter — A Constant Reader, Widdicombe—A Subscriber, St. Neotts—*declined for want of space.*

THE MEDICAL TIMES.

SATURDAY, MAY 6, 1843.

How fearful
And dizzy 'tis to cast ones eyes so low!
The crows and choughs that wing the midway air,
Shew scarce so gross as beetles.—LEAR.

THE distinctive character, the peculiar vocation of the Medical Profession, is in very truth the highest and most ennobling of avocations merely human. It combines in its study, taken in its full acceptation, an exalted theology, the *best* portions of philosophy—and, in its practice, systematically lays the wide domain of science under ceaseless contribution, by thousands of hands, to the augmentation of high mental enjoyment, and the assuagement or prevention of misery. In one word, it seeks the purest of ends—*human happiness*, through the noblest and surest of instruments—*science.*

We repeat, then, with emphasis, our expression given a fortnight since—that the real distinction, the true respectability of our profession, is its science. It is to us what valour is to the soldier, piety to th priest, chastity to woman. In it (far more than in a better coat or a college diploma) resides our distinguishing feature from the murderous empiric. It is our only title to existence as a profession—our only claim to support.

With this full conviction on our minds, if we would feel, not only the respectability but the pressing necessity for Medical Reform, we have only to look at our profession as it presents itself to our eyes while suffering under its present system. If science be its end and object, how has that end been answered under its present rulers? Looking at our body, either in its head, or rather heads, or in its members, the characteristic which stands out most prominently is certainly not its science. Go to our colleges, and you find them scarcely more colleges—that is, more seats of learning and seminaries of science—than the Royal Exchange, or the Parisian Bourse. They are institutions ingeniously contrived for the manufacture of examination fees, and dinners for a self-perpetuated group of council lors, or a select caste (Brahminical in their knowledge) of Fellows and Elects. The Worshipful Company, eccentric enough in all other matters, can present here a striking uniformity. It knows, as well as the Colleges, how to unite *minima* of education with *maxima* of personal emolument. Antiquity may be decried, but it knew, as well as our keenest practice-hunters, how to keep its balances on the creditor side.

If from the buildings we turn to those ruling them, the writer would meet with little credence who would offer them as practical definitions of that noble character —the man of science. Our chiefs even spurn the name as an insult. They are recipients of so much per annum (their *private* property being the most valued item)—they are denizens of an aristocratic square—acquaintances of the noble—agreeable fellows in society—carriage-owners—gentlemen—bustling men of business; any thing, in short, but those patronized and humble beings—*men of science.* Where, indeed, in either college, may we look to see that unobserved but ceaseless industry, that studious retirement, that self-devotion, which betray a real love, and prove a veritable cultivation, of science? The spirit that animated a Boerhaave is not, we think, the same that influences a Brodie,—Burroughs, we are told, is not a Sydenham,—Hue *(eheu prisca fides!)* not a Harvey,—Mr. Babington is not a perfect revivification of John Hunter; and, with all our charity and good meaning, we should have to look very hard to discover a Hippocrates in our classical admirer, Halford——or a Galen in our acute friend, Guthrie. The only man *connected* with either national college, who offers a secure promise of posthumous fame, the only true man of science, is *excluded* from their *councils.* The tie that binds to their alien association the man in whom the " the wonted fires" of a Cuvier are found relit, is but an ill-paid *employe-ship!*

When the manufacture and worship of Mammon is thus so much the principle of our *almæ matres* and chiefs, it is not wonderful that it should descend down, more or less, through all the different grades of the profession. We are a money-grubbing community. We are, it is true, not more so than the members of any other profession; but we are far too much so for a body exclusively scientific, or to answer properly the spirit of our vocation. Our practice, public or private, our leisure avocations, our hospital attendance, our lecturing, and alas! our book-writing, are all contaminated with the foul breath of venality and mammon. They are generally mere mercenary speculations—and this not through our fault, but our rulers'. A system which leaves pure science, in its highest walks, without rewards, makes a successful tradership in patients' fees, not only the policy but the necessity of " the prudent man."

The obvious consequence of so lamentable a state of things, must be a widely spread and deeply infixed degradation, a degradation at once mental, moral, and social. The man who can make tact a substitute for knowledge—i. e., a mixture of ignorant cunning and audacity supply the place of due professional skill—and yet attain not only large professional emoluments, but posts of distinction in the medical commonwealth, offers a dangerous example, which will never want followers as long as life has seductions, or humanity idleness. From the first stage of trickery to the last of demoralization,the descent is not remarkably difficult; and if our whole profession fail entirely to lose caste in soetety, under a continuance of the present system, it will only be because there are in every community, however misused, honest hearts and able minds, whom no amount of precedent or temptation can deflect from the high paths of science and morality.

That we *are* lowered much, and very much, in public estimation is what no man can doubt. It is plain enough in the evil fortunes of somany of our members; we see it exhibited in the tone of the public press; and one of its worse symptoms presents itself in the universal patronage given by the public to every variety of empiric. Sir Benjamin Brodie, and some of his brethren, equally *genteel*, insolently tell us that we must elevate ourselves if we would annihilate our illicit rivals. Sir Benjamin forgets that we owe our degradation to the same policy to which he owes his uprise—the want of "a fair field, and no favour." We shall not long want our due elevation when the cause of it, the hole and corner and irresponsible government of himself and friends, is removed.

It is on these just and *classic* grounds that we invoke the advent of a reform which will change not the externals only of the system, but the whole "inner man." The only guarantee for this, is that we be no longer treated as cyphers in the matter of our Government, but that the power of self-controul with the distribution of honours and rewards be reserved in the hands of those to whom alone they can safely be confided. We are men—we protest, therefore, against children's treatment. We are gentlemen—we must not then be treated as servants. We are men of science and learning—we must not be treated as if we were without intellects. If we are even not all that we ought to be, to underrate and underplace is not the way to improve, or (as Sir Benjamin has it) to elevate us. *Possunt quia posse videntur.* We become what we think we are, and we rate ourselves, and are rated, more from extrinsic measures than people generally wot of. If Sir Benjamin and his friends claim the elective privilege as members of a Royal Society, or a Medico-Chirurgical Society, which others govern, is there any reason why we should not demand the same privilege in the Society which *he* governs? Those who like self-imposed stigmas may answer yes—and deserve them. For our part our emphatic answer is NO.

PHARMACEUTICAL VARIETIES.

Wave Hypothesis af Light.

To account for the phenomena of light, says Dr. Pereira, in a lecture to the Pharmaceutical Society, philosophers have assumed the existence of a vibrating medium, which has been called *the etherial medium*, the *luminiferous ether*, or simply *ether*. It is supposed to be a rare, highly elastic, subtile fluid, which occupies all space and pervades all bodies. As the sensation of light is supposed to be excited by the undulations of this medium, so, where light exists, there ether must be. Hence, it fills all space. It is between the sun and the earth, the earth and the stars, and so on. If it did not exist in water, diamonds, glass, &c., these bodies would not be diaphanous. So that it must pervade all bodies. Even opake substances must contain it, since, as in the case of gold, these become transparent when excessively thin.—*Existence of an Ether*:—We have no independent evidence to adduce of the existence of this medium. It is, therefore, an assumption; but one which is sanctioned by the high authority of Descartes, Huyghens, Euler, Hooke, Newton, Young, Fresnel, and some of the most distinguished philosophers of the present day, among whom are Sir J. Herschel and Arago. These eminent men have seen in this assumption nothing inconsistent with their knowledge of the constitution of the universe. The electrician and the magnetician have assumed, respectively, an electric and a magnetic fluid, and there can be no impropriety therefore, in the optician assuming a luminiferous ether, provided, however, that it be compatible with well ascertained facts, and do not violate known laws. Moreover, it is by no means improbable that the fluids which have been respectively assumed as the causes of electrical, magnetical, calorific, and luminous phenomena, may be one and the same.—Even gravity, perhaps, may be referable to the same cause. Newton himself has thrown out a speculation of this kind. Alluding to the ether, he says, "Is not this medium much rarer within the dense bodies of the sun, stars, planets, and comets, than in the empty celestial spaces between them? And in passing from them to great distances, doth it not grow denser and denser perpetually, and thereby cause the gravity of those great bodies towards one another, and of their parts towards the bodies; every body endeavouring to go from the denser parts of the medium towards the rarer?" Very recently, Dr. Roget and Mosotti have shown how, on the assumption of an etherial medium, the phenomena of gravitation and electricity, may be included in the same law.—It has been said, that if the universe contained a fluid of the kind here referred to, the planets must experience some resistance to their motions and, therefore, that as no resistance can be detected, there can be no etherial medium. This conclusion, however, is by no means a necessary one, for "if this ether," says Newton, "should be supposed 700,000 times more elastic than our air, and above 700,000 times more rare, its resistance would be above 600,000,000 times less than that of water. And so small a resistance would scarce make any sensible alteration in the motions of the planets in ten thousand years." The most satisfactory evidence of this resistance, if indeed it exist, might be expected to be found in the case of the comets, bodies made up of the lightest materials, in fact, masses of vapour, and therefore, from their less momentum, more likely to suffer retardation. In the case of Encke's comet evidence of this resistance is believed to have been obtained. The mean duration of one entire revolution of the comet is about 1207 days, and the "magnitude of the resistance is such as to diminish the periodic time about one ten thousandth part of the whole at each revolution; a quantity so large that there can be no mistake about its existence." The following table of the mean duration of one entire revolution of this comet, allowance being made for perturbations occasioned by the action of neighbouring planets, is taken from a memoir by Encke.

	Days.
From 1786 to 1795........	1208.112
" 1795 to 1805........	1207.879
" 1805 to 1819........	1207.424

Sir John Herschel observes, that "on comparing the intervals between the successive perihelion passages of this comet, after allowing, in the most careful and exact manner, for all the disturbances due to the actions of the planets, a very singular fact has come to light, viz., that the periods are continually diminishing, or, in other words, the mean distance from the sun, or the major axis of the ellipse, dwindling by slow but regular degrees. This is evidently the effect which would be produced by a resistance experienced by the comet from a very rare etherial medium pervading the regions in which it moves, for such resistance, by diminishing its actual velocity, would diminish also its centrifugal force, and thus give the sun more power over it to draw it nearer. Accordingly (no other mode of accounting for the phenomenon in question appearing) this is the solution proposed by Encke, and generally received. It will, therefore, probably fall ultimately into the sun, should it not first be dissipated altogether, a thing no way improbable, when the lightness of its materials is considered, and which seems authorized by the observed fact of its having been less and less conspicuous at each reappearance."

Researches on Pyroligneous Acid, Wood-Naphtha, Alcohol, and certain of their Compounds, instituted with the view of ascertainıng the presence of Alcohol, when fraudulently disguised with these two Fluids.—By ANDREW URE, M.D., F.R.S.

On the 22d of Nov. last. a wine-bottle full of a light brown liquid, imported into Liverpool under the name of Naphtha, was sent to me for examination. It smelled rankly of pyroligneous acid, had an unplesant sourish taste, reddened blue litmus paper strongly, and had a specific gravity of 0.942=19. 5 per cent. under excise proof. The acid being neutralized with a test solution of pure carbonate of potash, indicated 1. 2 per cent. of real acetic acid—equivalent to 24 per cent. of excise proof vinegar. Another portion of the liquor was neutralized with quicklime, and distilled by the heat of a water-bath, when it afforded a spirituous fluid, of specific gravity 0.878, equivalent in quantity to about 80 per cent. of a spirit excise proof. This being again rectified with excess of lime, lost much of its empyreumatic flavour, and showed itself to be alcohol tainted with the pyrogenous oil of wood vinegar, and not to be wood-naphtha. When two liquids are equally volatile, as is the case with alcohol and naphtha, or wood-spirit, it is utterly impossible to separate them completely by distillation, or by any direct methods, and this fact is no doubt well known to the compounder of this spurious naphtha. In like manner, when lead and tin are combined, as in solder, it is impossible to separate them by fusion, because they melt together; but they may however be most easily parted by the action of nitric acid, which converts the tin into an insoluble oxide, and the lead into a soluble salt, and then the two metals may be perfectly separated by mere washing with water, and the quantity of each exactly ascertained, from the known composition of tin oxide and nitrate of lead. Thus, also, when alcohol and naphtha are mixed, we must have recourse to an indirect but a quite accurate method of parting them, and estimating the proportion of each in the mixture. In the present case, however, that is hardly necessary, since on rectifying the spurious naphtha by distillation with quicklime I could distinguish plainly, by the taste and smell, the presence of alcohol in very large proportion in the purified spirit. 1. When alcohol of from fifty to sixty per cent. over-proof is mixed with its own weight of sulphuric acid, and properly distilled, it affords the fragrant liquid well known by the name of ether or sulphuric ether, and when the distillation is continued too long, the residuum in the retort becomes black, thick, and finally froths up with such impetuosity, as to be projected out of the vessel, through this be of fifty times the capacity required by the liquid before its intumescence. The process must therefore, be well watched, and the heat withdrawn, some time before the phenomenon occurs. 100 parts of absolutely pure alcohol yield 80.6 parts of ether, by losing merely 19.4 parts of the water combined in the elements of alcohol. See *Liebig's Organic Chemistry*, i., p. 315. 2. When wood-spirit (wood-naphtha) of the same strength is treated in like manner, and distilled along with sulphuric acid, it affords not a LIQUID, but an AERIFORM product. "Methylic ether," says Professor Liebig, "is prepared by distilling a mixture of equal volumes of concentrated sulphuric acid and wood-spirit. The *gas* which is disengaged, is to be passed first through milk of lime, and then through several tubulated bottles filled with water. This compound is a colourless gas, possessed of an agreeable ethereous odour. A cold of 16 deg. below zero, of the centigrade scale (29 deg. Fahr., below the freezing point of water) does not render it liquid."—*Chimie Organique*, vol. 1., p. 540.

Berzelius says, "Oxide of methyle or ligneous ether (made as above described) is a *gas* which does not condense in the receiver, but which should be collected over mercury. It is a colourless gas, which does not condense at 16 deg. under 0. deg cent. As the operation of distilling the mixture of wood-spirit and sulphuric acid advances, the mixture becomes yellow, brown, and at last black, but *without thickening or frothing up, as happens when alcohol is treated in the same manner.*"—*Traite de Chimie*, vol. iii., p. 403, of the French translation by Valerius Brussels, 1841. "Pyroxylic spirit," says Professor Kane, in his 'Elements of Chemis-

try,' published about a year and a half ago, "is frequently termed methylic alcohol. The methylic ether is at ordinary temperatures and pressures, a colourless gas."—p. 1091. 3. I rectified the said naphtha by repeated distillations; first, by itself to separate the pyroligneous acid, (which was obtained in very measureable quantity) and then with quicklime. The volatile spirit thus procured had a specific gravity of 0.839, and resembled alcohol more then naphtha. I then treated it, as above prescribed, with sulphuric acid, when it yielded a fine fragrant LIQUID sulphuric ether, and nearly in as large a quantity as the same volume of alcohol could have done. A very little lignous or methylic ethereous gas also appeared, and passed off through the water of the safety-tube of the receiver. Three fluid ounces nearly of ether were obtained. On continuing the heat, after the receiver was removed, the materials in the retort on the sand-bath became thick, black, frothed up, and were projected out of the vessel with great force. Thus, by the product of fine liquid ether, and the intumescence in the retort, two infallible proofs of abundance of alcohol in the said naptha are obtained.—It is my opinion that the contraband article in question will make as good ether as the best spirits of wine, because the minute wood-spirit or pyroligneous portion flies off in the form of a gas during the etherification. Hence its clandestine importation would prove a serious detriment to the spirit revenue, as well as to the honest distiller, rectifier, and manufacturing chemist.—I have analysed the pyroligneous acid residuum of the first distillation of the said naphtha, conducted by the heat of a water-bath, and I find that four fluid ounces of it saturate with lively effervescence as much carbonate of potash as two fluid ounces of ordinary vinegar, of five per cent. of real acetic acid, could have done.—On the 25th of February, I received a box containing eighteen bottles full of the said napbtha, having the corks sealed with the custom-house arms.—On Monday, the 27th, I opened the chest and uncorked the bottles in the presence of Mr. Scanlan, well known to the chemical world, as being the author of the only discovery of consequence made regarding naphtha by any British chemist. He has had, moreover, much experience in the manufacture of ether, and in the rectification of alcohol and wood-naphtha upon the commercial scale.—On Monday morning, we commenced our analytical operations. We found all the sample bottles to contain a liquor, apparently the same, having a specific gravity of 0.944, and three or four were 0.948. This trifling difference arose from slight variations in the quantity of pyroligneous acid which had been added originally to the alcohol for the purpose of disguising it. They all had the sour smell of crude vinegar, and reddened blue litmus paper very strongly.—We subjected half a gallon measure, taken from five of the bottles indiscriminately to distillation by the heat of a water-bath, as a preliminary experiment, and obtained a spirit of specific gravity 0.901, or 14.67 over-proof, while an acidulous residuum was found in the still, which was saturated with effervescence by crystals of soda, and indicated one per cent. of real acetic acid in the original liquor, equivalent to twenty per cent. of excise proof vinegar. The above experiment furnished eighty-one per cent. of proof spirit out of the gallon. Some of this spirit was rectified along with quicklime in a glass retort, by the heat of a water-bath, whereby its specific gravity became 0.832, or 58.63. over-proof. A portion of this spirit was mixed with its own weight of sulphuric acid (oil of vitriol), and distilled with proper precautions by the heat of a sand-bath, when there was obtained an agreeable smelling ether, in about the same quantity as pure alcohol, of the same strength, would have yielded. This fluid, on being rectified in the usual way, afforded a fine ether, of specific gravity 0.752; a lightness perfectly decisive of the perfection of the ether, and consequently of the spirit from which it was formed, being nothing else than alcohol.—Having made these incipient trials, we proceeded to operate on a larger scale, and distilled a gallon of the Liverpool liquor in a still mounted with a rectifying apparatus of my own invention. The pyroligneous acid was saturated beforehand with quicklime, and then the clear filtered liquor was subjected to distillation over a naked fire. The spirit which came over was again rectified with more quicklime, in a glass apparatus, by the heat of a water-bath, when it came over of a specific gravity 0.8268, or 61 over-proof. Spirit of this gravity being well adapted to making ether, a proper proportion of it was taken along with sulphuric acid, and submitted to the process of etherification in Bouillay's continuous method, as described in my Dictionary of Arts, p. 442. Ether came over most abundantly through Liebig's glass condenser, into a glass receiver, furnished with a safety-valve. The ether was characterised by its peculiar striæ or lines of fluid down the sides of the globular receiver, as also by its cool refreshing fragrance. No less than twenty-six fluid-ounces, apothecaries' measure. were obtained of an ethereous liquid, of specific gravity 0.787, which, on rectification, became of specific gravity 0,742, boiled under 100 deg (Fahr.) and amounted to fully twenty ounces measure, being a quantity about as great as the same quantity of alcohol of the purest kind would have yielded. This ether is lighter than the best standard ether of the Pharmacopœia, sold at the Apothecaries' Hall, London, therefore finer, and certainly as fragrant. and more volatile. The sequel of the ether distillation furnished the usual liquid products of the etherification of alcohol along with olefiant gas in great profusion, characterized by its burning with a white flame, like that of wax candles, and by its being condensed on admixture with chlorine gas into chloride of carbon, the oily looking liquid from which it derives its familiar name. I have found that when ten parts of wood-naphtha are mixed with ninety parts of alcohol, each of moderate strength, and the mixture is treated with sulphuric acid as above, it dose not afford any good genuine ether, but a peculiarly pungent offensive fluid, proving that the spirit drawn out of the Liverpool naphtha must contain little or no real wood-naphtha, but that it owes its peculiar taste and flavour to the pyrogenous oil of tho wood vinegar, of which a few drops suffice to contaminate a gallon of good sweet alcohol. Sweet spirit of nitre is another product of alcohol, consumed in vast quantities in the United Kingdom. and which cannot be formed at all with wood-spirit naphtha. Mr. Scanlan and I followed the prescription of the Pharmacopœia, and obtained the full quantity of sweet spirit of nitre from the rectified Liverpool liquor, just as if we had used a like proportion of alcohol. The sp. gr. of this spirit was only 0·842=53·7 per cent. over-proof, while that of the commercial article is 0·850=49·1 over-proof.—We have also prepared a *good drinkable gin*, which persons accustomed to that beverage have relished very much. It was made with the Liverpool naphtha rectified with potash, as is customary in the compounding of cordials.—Having thus proved the alcoholic nature of the article, we next made a careful experiment to determine its exact amount, and that of the pyroligneous acid with which it was disguised.—We distilled a gallon of the Liverpool liquor previously neutralized with lime, and obtained at one operation, by means of my rectifier, a spirit 37·46 per cent. over-proof, equivalent in quantity to eight-tenths of the whole gallon in proof-spirit, or 80 per cent. The residuary liquid, pyrolignite of lime, was decomposed into acetate of soda by crystals of soda, of which 3000 grains were required, indicating 1083 grains of real acetic acid, equivalent to about 45oz. measure of vinegar, excise-proof, or thirty per cent. of the original liquor. Thus the Liverpool pretended naphtha consists of seventy parts alcohol, 14·3 over-proof, and thirty of pyroligneous acid.—I now proceed to describe the researches we made into the properties of the several kinds of wood-naphtha now in the market, with the view of ascertaining the best criteria for distinguishing that fluid from alcohol, and, consequently, for discovering directly whether any sample of naphtha be illicitly compounded with alcohol, or be genuine.—With this view, I procured from Messrs. Hill of Deptford, whose chemical works I am well acquainted with, a quantity of their rectified wood-naphtha, and also of the rough naphtha as first drawn off by distillation from the pyroligneous acid of their own manufacture.—We rectified in my still a gallon of their genuine rough naphtha, and found it to exhibit all the phenomena characteristic of this fluid; viz., boiling at a temperature fully twenty degrees below that at which alcohol-wash of the same gravity boils, and exhaling the peculiar smelling vapour of aldehyde, most offensive to the nose, and causing the eyes to redden and to weep. When thus distilled, it agreed in its properties with their rectified wood-naphtha. The fluid is colourless, has a peculiar, somewhat offensive odour, exhales, at a moderate warmth, a vapour very painful to the eyes, and, therefore, much dreaded by the hatters, who used to employ it in large quantities for dissolving their so-called gums, or shellac and sandarac. Hence there is a very strong temptation to introduce in its stead smuggled alcohol, slightly disguised, which does not injure the eyes, and is, moreover, a far better solvent of the gums. The pyroxylic spirit of Messrs. Hill is almost the only one that I have been able to meet with on sale in this country, which I think to be truly genuine. Other samples consist, more or less, of alcohol, illicitly introduced to the great injury of the revenue. Genuine wood-spirit has the following distinctive characters:—1. When rectified naptha, of specific gravity of 0.870, such as Messrs. Hill send out for sale, is distilled along with a large quantity of unslaked powdered quicklime, in a retort plunged into boiling water, the spirit comes over with its gravity unchanged; whereas, if genuine alcohol, or the spirit from the Liverpool naphtha, be distilled in the same way, each of these is alike concentrated, so as to be obtained nearly free from water, and of a gravity under 0.800, or 70 per cent. over-proof, and of the temperature 60 deg. (Fahr.). Here, then, is a most remarkable difference between alcohol and wood-spirit; one which of itself demonstrates the Liverpool liquor to be alcohol, and not naphtha; for did it contain even five per cent. of naphtha at the original dilution of the liquor, it could not be concentrated by the heat of boiling water with quicklime to the above low gravity. Wood-spirit, thus, seems to possess a greater affinity for water than alcohol—a fact, of which another evidence will be presently adduced. 2. When alcohol is reduced with water, the mixture undergoes a condensation of volume, so that 100 gallons of strong alcohol, mixed with fifty gallons of water, do not occupy the space of 150 gallons, but a less space, proportional in a certain degree to the strength of the alcohol. Upon this fact, the excise tables of alcohol are constructed. Thus when alcohol, of specific gravity of 0.832, or 58.6 over-proof, is to be reduced to proof, or 0.920, 100 parts of it in volume are to be diluted with water till the mixture at 62 deg. Fahr. occupies the space of 158.6 measures. The spirit from the Liverpool liquor agrees exactly with alcohol in this respect, but both differ from wood-naphtha, which suffers a greater penetration of parts, and condensation of volume by dilution with water, so that 100 parts of specific gravity 0.832, made to occupy 158.6 measures, by the addition of water, form a mixture of specific gravity 0.927 or 0.928, and 62 deg. Fahr. Even the genuine naphtha of specific gravity 0.870 or 36.12 over-proof, reduced with water till 100 measures become 136.12, has a specific gravity of 0.927; whereas alcohol and the Liverpool spirit so treated, have the specific gravity of 0.920, or excise spirit proof.

3. The boiling temperatures of alcohol and genuine wood-spirit are remarkably different, and afford, therefore, excellent criteria for distinguishing two fluids. Hills' naphtha of 0.870 specific gravity, boils at 144 deg. Fahr. when heated in a small flask or matrass by means of a water-bath. If it be concentrated to the strength corresponding to specific gravity 0.832, it boils at 140 deg. Fahr. Alcohol of specific gravity 0.870 boils in the same circumstances at 180 deg., and of specific gravity 0.832, at 171 deg. 5 min. Fahr. The spirit from the Liverpool liquor agrees with alcohol in its boiling points at the several degrees of specific gravity, but differs entirely from naphtha in this most characteristic feature. If 10 per cent. of naphtha be mixed with alcohol, each of specific gravity 0.870, the boiling point of the alcohol is lowered at least 6 deg. of Fahrenheit's scale. Upon this physical principle, it is clearly de-

monstrable that the spirit in the Liverpool liquor does not contain 5 per cent. of wood-naphtha.

The spurious naphthas in the market are characterized by two features: first, their low specific gravity; second, their high boiling points. Some of them have a gravity of only 0.822, others of 0.827. Now, as it is impossible to concentrate real wood-spirit to this pitch, by any ordinary manufacturing means, while alcohol may be without much difficulty so concentrated, a suspicion naturally arises of the illicit introduction of alcohol into a liquid sold at a price 60 per cent. at least under that of alcohol. This suspicion becomes a certainty on referring to the boiling points and other means that have occurred to me. The temperature at which these very *light* naphthas boil, is *higher*, by at least 8 deg. Fahr, than that of the much heavier and more watery naphtha of Messrs. Hill. One naphtha of specific gravity of 0·8216 boils at 152 deg., while Hill's genuine wood-spirit of 0.832 boils at 140 deg. Fahr. By compounding alcohol and genuine naphtha, fluids are formed with boiling points like the above spurious or fraudulent naphthas.

4. When genuine naphtha is treated with its own weight of sulphuric acid, as in the process of etherification, the phenomena and products are quite different from those with alcohol and sulphuric acid. White fumes are exhaled most abundantly, while a gas is disengaged that burns with a faint blue flame. An acidulous liquor is found in the receiver, which being neutralized with potash, and redistilled, affords a liquid of specific gravity 0.911, possessed of a peculiar pungent spicy odour, and resembling coal-oil in being immiscible with water. Here are sufficient proofs that real wood-spirit can furnish with sulphuric acid nothing in any respect resembling ether. In the course of the above and other elaborate researches, unnecessary to be detailed here, I had the good fortune to contrive a mode of solving the following rather puzzling problem—one of great consequence in this fiscal question: *Given, a mixture of wood-naphtha and alcohol, each of the same specific gravity or otherwise, and which suffer no change of density by admixture; to determine in the course of twenty minutes the proportion of each.*—The solution of this problem is quite independent of the boiling temperature, which is indeed not precise enough to lead to correct results in the present case. It is, in fact, performed without the aid of heat.

Having terminated for the present the chemical proofs, I shall subjoin some commercial considerations upon the subject. Wood-naphtha is the product of pyroligneous acid solely, from which it is obtainable in the very small proportion of less than one per cent. But that acid is made almost solely for the use of calico-printers, so that where there are no great calico-printing establishments, as there are none in the United States, little or no wood vinegar is prepared. Now the cargo of the present naphtha detained at Liverpool, amounting to about 2000 gallons, would be equivalent to at least 200,000 gallons of pyroligneous acid, a quantity certainly far greater than has been formed there since the days of Elizabeth. Great Britain and France supply the American females with a profusion of printed goods of such price, beauty, and fashion, as to suppress almost entirely their small homely fabrics of the kind. If they cannot, therefore, send us naphtha, which they do not make and could not make so cheaply as in the works of Swansea and other parts of Wales, they can inundate England with their coarse ardent spirits in the depressed state of their distilleries, at the rate of one shilling per gallon, whereas, naphtha is worth six times that sum; and they can readily procure as much pyroligneous acid as will suffice to give their alcohol such a taste and flavour as to deceive chemists, who take their nose for their guide. This is "the heart of the mystery."—*Pharmaceutical Journal.*

Analysis of a Calculus removed from the Lachrymal Canal. — This calculus was extracted from the lachrymal canal of a lady, æt. 66, who had always enjoyed good health, with the exception of a few slight attacks of gout, which left some concretions on the finger and toe joints. — The calculus weighed 1-10th of a grain, and yielded on analysis, by M. Bouchardet:—

Solid albuminous substance	25
Mucous matter	18
Fat	a trace
Carbonate of lime	48
Phosphate of lime and magnesia	9
Chloride of sodium	a trace
	100

HOSPITAL MISMANAGEMENT.

To the Editor of the 'Medical Times.'

Sir,—I cannot too strongly express my disgust at the ungentlemanly attack in your last number on one of the physicians of the Westminster Hospital. The mind which could, for one moment, conceive, and the hand which could execute such a tissue of falsehoods, must altogether have been wanting in that honour and those feelings which alone would characterise a gentleman: it is, unfortunately, too clear, that your correspondent could not possibly ever have laid claim to such a pretension.

I am led to believe, Sir, that the attack emanated from an individual who formerly held an official appointment, but whose disgraceful conduct, and want of humanity, compelled the lecturers to dismiss him altogether from the School, and I am sorry to behold, that one endowed with "*that knowledge which alone distinguishes the surgeon as a man of education and deep research,*" should have so grossly deceived you in your expectations, not only by his previous conduct, but by his palming himself off now as a pupil.

With regard to the lectures, I can confidently state, that the requisite number was given, and the reason why your correspondent should single out one individual more especially than another for his unwarranted abuse, was because that individual, as chairman, was the instrument of conveying to him the opinions of the lecturers, condemnatory of his reckless proceedings.

Dr. Roe has ever been the pupil's best friend; the advantages now possessed by the students of Westminster Hospital have been wrought, more or less, by his instrumentality, and the very number which contained the attack, contains also an article, laudatory of the physicians and surgeons, that proceeding emanating from no less than the person, upon whom you and your correspondent so strongly animadverted: so, on the one hand, you condemn the man, whilst on the other, you laud his actions.

Again, Sir, for three months, at the hospital, Dr. Roe did the duties of three physicians, being in attendance every day, and regularly giving his clinical lectures, and also daily lecturing at the school, and I defy your correspondent to prove the statement which his heart, fraught with such villainy, indited.

In expressing these statements, I may here observe, that they are in accordance with the feelings of the whole of the students, and as your columns are ever open to the rectitude of abuses, and the correction of mis-statements, I am led to hope, that this letter will meet with an insertion, and I trust that the so-called "Pupil" will in future impress on his communications to you the word "Veritas."

I am, Sir, yours obediently,

A Student of Medicine.

Library, Westminster Hospital.

[This is certainly a very *direct* contradiction to the letter of "A Pupil." That it is a satisfactory one we are far from believing. Why is it anonymous? The strong personal feeling evinced in the note does not prove it *not* to be written by Dr. Roe—does the absence of a name which might be given in confidence? If the writer were armed at all points in honesty, he must have been in utter mental bereavement if he did not give denials—which it seems so important in him to have believed—the one thing which alone could attain his object the *public* or *confidential communication of his name.* For ourselves, we have little faith in such suspicious asseverations. That Dr. Roe assisted in introducing *an* improvement, we admit, and for that he has our thanks and support. That he *originated* it we entirely deny. We are afraid too we cannot give credit to the assertion, that Dr. Roe regularly gave his lectures. We have, on this matter, known authorities against anonymous assurance. The assertion that Dr. Roe has done duty for three physicians, has nothing to do with the subject under discussion, except that it proves, that a physician with the large practice Dr. Roe enjoys, must have found it difficult to have discharged any part of his three-fold offices well. The circumstance is very discreditable to the Institution.—We now direct attention to another statement, which is not quite in accordance with this correspondent's declarations.—Ed.]

To the Editor of the 'Medical Times."

Sir,—The thanks of every honest and industrious pupil of Westminster Hospital and School, are due not only to you, Mr. Editor, for the very candid and independant way in which, as the pupil's friend and protector, you have exposed and commented on the shameful and most unwarrantable conduct of Dr. Roe, &c., but also to your faithful and spirited correspondent for his communication of the 22d ult., to the correctness of whose reports, I humbly beg to bear testimony.

I have long been anxious to have these glaring and dishonest abuses brought before the notice of the public; but want of confidence in the *Lancet* prevented me heretofore from making my grievances known. However, Sir, I have happily learned by experience, that your journal is not only the most valuable, but independent of its contemporaries. I therefore beg through the medium of its columns to express my most unqualified disapprobation of Dr. Roe's conduct as a lecturer during the past session. In my humble opinion his brief, but unscientific, and indigestible discourses, for they are unworthy the name of lectures, were the most miserable things of the kind ever given in a medical school. Dr. Roe has not only abused the department entrusted to his care in the school; but, if possible, is, and has been even worse in his conduct in the hospital during the past session. I assure you, Sir, most sincerely, that as a pupil of the hospital, it is most painful to my feelings to make this accusation against my senior (for I cannot conscientiously call him my teacher, never having derived any benefit from his instructions.) Day after day have I walked round the wards with Dr. Roe without ever hearing one lucid clinical remark, his whole time being almost spent in private colloquy with the house apothecary, concerning the cases, as they proceeded from bed to bed—the medicine for the patients being prescribed in the same silent mood, and the card hung up at the patient's bed-head, in a great number of cases, without even the name of the disease being mentioned on it, or any notice of one half of the medicine ordered. It is thus quite impossible for the pupil to form any idea as to what he may attribute either the patient's recovery or death. The baneful consequences following such slovenly neglect was clearly manifest in the case of the late coal carrier—Clarke, a servant

of the hospital—whose life was lost a few weeks since from the incautious, but fearful administration of opium, ordered for him while the poor fellow was laboring under a severe fit of *delirium tremens*.*

[We have then charges with respect to certificates which we cannot print without the public authentication of our correspondent's name.—Ed.]

But, I ask, must it not be most painful to my parents and myself, that being asked, as I naturally will, on my return to them, what I have learned of that most important of all branches of my profession—the Practice of Medicine—I must either be guilty of telling a lie, or answer that I have literally learned nothing, and that I have been completely swindled out of the money which I have paid as the perpetual fee to both hospital and school, and the only thing in my power to shew for my money, and absence from home, is a false certificate, purporting to shew, that I have diligently attended lectures, and received instructions, which in reality were never given. The next question will most assuredly be, why did you enter to Westminster Hospital? I must here plead ignorance of either its management, or the character of the lecturers. But then, Sir, why did I not, previous to entering, read the leading article in the student's number of the *Lancet* for October last, or the wholesome and parental advice given in the Medical Times? I must candidly confess my regret at not having read the latter, and although having carefully perused the former, I was completely deceived by a current report, which I can swear was circulated on the 1st of October last, by the medical officers of Westminster Hospital, namely, that Mr. Wakley was then confined in a madhouse, and that the article in question was written by him during one of his paroxysms of insanity, and having been gravely told by one of the said gentlemen, that objects of distinction almost invariably attract the attention of madmen, I was persuaded that this was a very celebrated School of Medicine. Bitter experience has since convinced others, as well as myself, that the incisions of the *Lancet* did not extend even deep enough to expose the fundamental abuses and malpractices in Westminster Hospital, and that that, which was most unquestionably represented as the production of Mr. Wakley, when his monomania was at the climax,† must convince almost all medico-legal enquirers, that even men pronounced to be decidedly mad by the faculty, may have lucid intervals, and as Mr. Wakley was undoubtedly correct to the letter in his statement on this occasion, so ought others similarly deranged to be held accountable for their actions.

One of the Victims of Westminster Hospital.

[We are inclined to think that this is an overcharged statement, and *know* that in the Westminster School a spirit of improvement has manifested itself, which cannot be too warmly supported. If the resources of the Hospital, as an instrument of education, were turned into a little more account, as we are told they shortly will be, and both it and the school purged of boy-teachers, (Dr. Frederick Bird will understand us,) and non lucendo lucus's, like Dr. Roe and others, we might shortly see in Westminster, an institution to which medical science would owe the deepest obligations. With this kind feeling in its favor we have the less difficulty in inserting these notices from students: their publication is a guarantee that the abuses they expose will not last another session.—Ed.]

* We presume that no charge is alleged here, except one of want of caution and care in the manipulator or apothecary?—Ed.

† We thought it was well understood, that the state of Mr. Wakley's health precluded the mental exertion required for writing leading articles. The weekly evidence furnished of this fact, is truly appalling to the remaining readers of the *Lancet*, whose time is of any value to them.—Ed.

THE APOTHECARIES AND THEIR POSITION

To the Editor of the 'Medical Times.'

Sir,—From the general tone of the letters of Sir James Clarke we are inclined to believe that he has very kind feelings towards the apothecaries of this country, and is endeavouring to better their condition: the druggists also look upon us with great commiseration and are grieved that the dwelling of a licentiate of the hall should be defiled by drugs. These gentlemen are no cold sentimentalists, but are desirous of exerting themselves to lift us out of our humble position, kind souls. Help is better than pity: rather than see the apothecary in his present predicament, the druggists have nobly shewn their readiness to take the degrading duties upon themselves, *coute qui coute*, in order to promote the respectability of the profession. It has been discovered that it is a disgrace for a man educated as an apothecary, to practice as such. The Pharmaceutical Journal states that "Sir James Clarke is desirous of rescuing them, *i. e.* the apothecaries, from their present equivocal position as Medical Shopkeepers." Sir James's panacea that he is coaxing the apothecaries to swallow, consists of the following ingredients—discontinue the Apothecaries Company—separate the practice of pharmacy from medicine—raise the minimum of education. Now sir it requires very little sagacity to discover that this plan would not raise the apothecary but annihilate the class in a very few years, to the inconvenience of the greater portion of the public. The profession is established for the public and not the public for the profession: this fact it seems, is quite overlooked by the pseudo reformers of the present day. I have for a long series of years been in the profession, and have seen the practice of different parts of the kingdom, and have had extensive intercourse with the profession, and have travelled in other countries. I am, fast going into the vale, and it matters not to me what changes may take place in medical polity, but I am persuaded from long personal observation, that any organic change in the present grades of the profession would be injurious to the community.

There are morbid or functional evils that should be remedied, and these, the corporations, have the power to do. A crying evil in this country is over legislation and lax execution; we think more of making laws than of acting upon them. The public has a right to demand a guarantee that all persons who prescribe or prepare medicines shall be duly qualified for those duties, and beyond that the public does not wish to interfere. The Royal Colleges of Physicians and Surgeons, and the Apothecaries' Company, do give testimonials to duly qualified persons in medicine, surgery, and pharmacy, and if the laws with which the three corporations are empowered were carried out, the interests of the profession and the public would be protected. If the present generation of apothecaries were to be annihilated, a new set would spring up from the druggists who are now carrying on an extensive medical practice, and this would arise from the demand for dispensing practitioners. Where a demand exists a supply will always be found, and the convenience to the bulk of the community of a visiting and dispensing practitioner is such that it will not be relinquished, and it would be an act of atrocious tyranny to refuse it by legal enactment. I may, perhaps, on a future occasion enlarge upon some of the points set forth in this paper. I feel confident that many notions that are published on medical reform are absurd and detrimental, though, perhaps, well intended.

I would earnestly beseech the young apothecary to hold fast to pharmacy, or to seek some other profession; if he has his living to procure by his avocation, he stands or falls with pharmacy.

I am, Sir,
Yours respectfully,
An Old Apothecary.

London, May 1st, 1843.

THE ADVERTISING QUACKS.

To the Editor of the 'Medical Times.'

"In this metropolis will quacks abound,
Who'd poison you outright to get a penny;
Monsters! who'd recklessly deal death around,
Till the whole globe were one vast burial-ground."

——— "Altius omnem
Expediam prima repetens ab origine famam."
Horace.

Sir,—You lately gave your readers an account of the laws relating to medical men in France. You shewed that no man can practice physic *there*, unless he be a Doctor of Medicine, a Doctor of Surgery, or "un Officier de Santè." Were you to favour your subscribers in France with a digest of *our* laws, you would doubtless observe that no one is allowed to practice *here* without a diploma from some university, and license from the College of Physicians and Apothecaries' Hall. You might enumerate the penalties for infringement of these regulations, and conclude by saying, that to the Royal College is committed the onerous charge implicitly fulfilled, (?) of seeing that no incompetent or unqualified persons intrude themselves into the profession. This is indeed the law—this is the *theory*. We need only look at London to tell us what is the *practice*. In spite of the want of any qualification—of even common education—do we not see quacks of every degree, from the rich, or "passing rich" Jewish knave, in his curricle and pair, down to those pseudo "Doctors" whose addresses may be seen in all our sinks, calling themselves "Surgeons." and practising as such,

"Not for the sickly patient's sake,
Nor what to give, but what to take;
To feel the pulses of their fees,
More wise than fumbling arteries."
Butler.

and this, too, not in the byeways and obscure alleys, but in fashionable localities, and the broad light of day. The cupidity of the press daily blazons forth advertisements of books partaking of the ambiguous and the salacious, the authors of which carefully inform you, "that they may be daily consulted at their residences," as doubtless they are:—

"For the world is naturally averse
To all the truths it sees or hears,
But swallows nonsense and a lye
With greediness and gluttony."
Hudibras.

Now the most prominent of these *soi-disant* surgeons are, as you have remarked, filthy lucre loving Jews, who having given over the not less profitable and respectable vocations of keeping "so so," and "spunging houses," resort to this expedient of raising the wind! These veritable descendants of Judas Iscariot have as clear notions of honesty, consistency, or decency, as the born blind of the difference of colours. One Jew, say in Newman or Berners Street, has been successively Dr. J—n, Monsieur Le D—, Mr. —, and now rejoices in the more Christian soubriquet of Mr.

Lu—s, whilst his *own brother*, in the NEXT STREET, and who has an "*establishment*" in our first manufacturing town, camelion-like, has changed his name as often "O dulce Sodalitium!" and is at present Mr. P——y! They are "ambitions," but unlike Cæsar, they are any thing but "honourable men." Instead of *translating old coats and shoes* into "*better-ish new*," they translate the souls of their victims from one world to another, and perhaps with as little remorse; or at best

"They prolong the snuff of life in vain,
And from the grave recover—gain."

Ex uno disce omnes, they are all alike, they bear a family likeness, Jews and Gentiles. Their common purpose is the acquisition of money. What sort of advice they can give—what notions they have of anatomy, physiology, or pathology, what sort of diagnosis they can make I am at a loss to conceive. Perhaps they keep horoscopes, and cast nativities, or resort to the more modern method of "tossing up." But it matters not to me or them, their object is a fee, and how best to secure fools to pay for, their advice or take their pills. Sir, we have stringent laws, but we want executioners—we have the remedy, and will not administer it. We could prevent this and will not take the trouble. We forget the truly Christian maxim of Pagan Sparta, that an injury done to the least among us is an insult to the whole community. *We* are the conservators of the public health, and the bare existence of a quack (as such) is an *injury* and an *insult* to the common weal. Our houses are carefully watched, our purses well guarded, but our *lives* are left open to the attacks of the *assassin*.—Yours, &c.

DELTA.

DIVISION OF POOR LAW DISTRICTS.

(To the Editor of the "Medical Times.")

DEAR SIR,—As Mr. Guthrie, in your TIMES of the 15th inst., invites enquiry into the defective arrangements affecting medical men and paupers, connected with Union practice, I venture to offer a suggestion.

As centralization is the order of the day in all public affairs, would it not be more effectually acted upon, and with greater benefit to the medical man and pauper, were the Union medical practice comprised within the circumjacent parishes, where the parties have most frequent intercourse with each other, and without reference to any particular Union? Why cannot the surgeon be permitted to take the practice of portions of two or more Unions immediately contiguous to him, where he happens to be thus advantageously situated, presuming that he is eligible in other respects, and to send a separate report weekly to each Board? I know a small town, containing not much more than a thousand inhabitants, which is situated in two parishes, which are in two counties, consequently in two Unions, and it is separated from a third Union by a river at the outskirts of the town. There are three surgeons residing there, and only one has any Union practice, extending, as is often the case, in a straight line into another man's practice. The evil complained of is, that one surgeon is made to occupy the ground belonging to another, while he himself is encroached upon by a neighbouring surgeon, neither of whom has any private practice beyond his own immediate neighbourhood. There can be no corresponding good resulting from this arrangement; and the poor, for whose especial benefit the Poor-Law was formed, are deprived the full enjoyment of medical attendance. Those villages which are equidistant between two surgeons, might be open for competition. If these remarks should be anything to the point in question, you can dispose of them as you may think proper. I shall be glad to give up the remote parts of my district, which is six miles off, with an equivalent remuneration, to the nearest surgeon, who resides within one mile—and, in one instance, within half a mile—of the inhabited parts of my district, for the purpose of answering a public good.

A SURGEON.

April 27, 1843. East Retford Union.

THE SPLEEN AND PLACENTA.

To the Editor of the "Medical Times."

SIR,—Although Mr. Paget has denied that he is the *Editor* either of the *Medical Gazette* or of *Forbes's Review*, he has not ventured to deny any other statement which my letter contained. Indeed he has not denied any statement; for I did not say he *was* the Editor of either Journal, but merely that he was the *reputed* Editor of both. This, however, is immaterial. Your readers will probably remember that I endeavoured (whether I succeeded or not I leave them to judge) to convict Mr. Paget of the disingenuous artifice of concealing the two most important facts on which my theory is based; and also of asserting that which he could not help knowing was untrue. The concealed facts were, first, that much more blood enters the heart by the hepatic veins than there is arterial blood sent through the cœliac and mesenteric arteries; secondly, that the spleen, relatively to the liver, is twice as large in men as in quadrupeds; and his assertion, which the first fact disproves, (and which assertion, I think, Mr. Paget must regret he ever made,) was, that I have adduced no proof that the left ventricle is incapable of propelling the portal blood through the liver. Mr. Paget's silence upon these points, or rather his expressed intention of *not noticing them*, only shows that he feels his inability to exculpate himself. No one who knows Mr. Paget will believe that if he were able to rebut my accusations, he would not. There is nothing would give him greater pleasure than to do so. But he would rather bear the accusations than handle the facts. His zeal, against what he is not the only one who thinks a hateful innovation, has placed him in a dilemma. He is, as it were, between the two prongs of a cleft stick, for he cannot prove his honesty and impartiality as a Reviewer without damaging the credit of his understanding. Awkward fix! Will no one help him to wriggle out? What is CONTRIBUTOR about—he who admits the *distensibility* of the spleen, and denies its *contractility!*

I threatened in my last letter to contrast Mr. Paget's manner of reviewing the works of others with that in which he reviews *his own!* In pure pity, however, for his present humiliating position I spare him the infliction. His note in your last number, is so respectful to you, and manifests so strong an unwillingness on his part to wage a pen-and-ink war with me, that I cannot, now, without violating my own tender feelings, play upon his. I am not naturally vindictive. I know, moreover, that his criticisms will have a directly contrary effect to that which he intended. For they will lead some to reflect, sooner, perhaps, than they might otherwise have done, how the blood gets through the liver, not only after birth, but before. And the result of that reflection will be that they will marvel one with another as to what could ever have induced them to believe that the heart propels the blood through the hepatic system; or what could so have blinded them as to prevent their seeing the important uses of those TWO VEINS of which the spleen and placenta are essentially only the *roots*.

I am, Sir,
Your obedient Servant,
JOHN JACKSON.

6, Stonefield-street, Islington.
May 1, 1843.

DR. DICKSON AND MR. WAKLEY, M.P.

We learn that Dr. Dickson has addressed to Mr. Wakley the following letter, to which no reply has been received:—

Clarges-street, 29th April, 1843.

SIR,—I herewith convey to you the MEDICAL TIMES of this day, which contains a letter I addressed and sent to you on the day of its date, by post. As you have taken no notice of that letter in this day's *Lancet*, I infer that you suppose the conductor of a medical journal may dispense with the common feelings of honour and justice that every man, pretending to the rank of a gentleman, is careful to evince when appealed to in your position. Therefore, I accuse you, Mr. Thomas Wakley, of having, in the case of Dr. Laycock, received stolen goods, knowing them to be stolen—of being a party to a scandalous and contemptible literary swindle. Get out of the matter how you can.

I am, &c.,
S. DICKSON.

SURGICAL OPERATION DURING MESMERIC SLEEP.

Extract from Minute of Meeting, of a Committee of Medical and other Gentlemen, held at Edinburgh, on May 1st, 1843.

PRESENT—Dr. John Scott, Howe Street, Dr. Glasgow, 22, Athole Crescent, Mr. William Tait, Surgeon, 8, Hill Place, Dr. Francis Farquharson, Northumberland Street, Mr. James Simpson, Advocate, Mr. William Chambers, Publisher, Mr. James Riach, Surgeon, 25, India Street, Mr. Robert Nasmyth, Surgeon-Dentist to the Queen, Mr. E. T. Craig, Lecturer on Phrenology and Mesmerism, Mr. Robert Cox, Editor of the Phrenological Journal.

Mr. Simpson read the conditions of the evening's proceedings. Mr. Riach undertook to act as watchman of proceedings: Mr. Simpson, as giver of Signals; and Mr. Cox, as Secretary. William Gill was brought from the next room by Mr. Simpson. At a quarter past 8 o'clock P.M, Mr. Craig began to mesmerize W. Gill. At 18 minutes past 8, the entrance of Dr. Farquarson caused an interruption; but the process was immediately afterwards resumed. At 21 minutes past eight, Gill appeared asleep, he was pricked, and his nose tickled by Mr. Craig at twenty-three minutes past eight, without showing any sensibility. Mr. Craig wrote on a sheet of paper on the table "Not so profound as will be shortly." At twenty-five minutes past 8, Gill's pulse wa felt by Mr. Riach, and reported to be ninety-two. Mr. Craig wrote "pulse should have been examined before." The pricking instrument (Mr. Craig's breast pin) was handed to, and felt by, several of the committee, including the Secretary, and found to be pointed. At half-past 8, Mr. Nasmyth examined Gill's mouth, and reported that "he closes it very firmly." Mr. Craig and he opened the mouth. At 32 minutes past 8, Mr. Nasmyth extracted a molar tooth; a minute later Gill was pricked and shewed no sign of sensibility. Mr. Nasmyth remarked that he seemed perfectly insensible. Mr. Riach said he saw no symptoms of pain; Gill's countenance had been perfectly tranquil. Thought Gill was partially roused by the operation, as the appearance of the eye

had changed. In answer to questions from some of the Gentlemen, Mr. Nasmyth said, he did not think this a case in which there would have, in ordinary circumstances, been very severe pain; as the tooth came out without great difficulty, still there would have been considerable pain. The Tooth was extracted without scarification. It had troubled the patient, and Mr. Craig had his written authority for its extraction. Blood flowed from the mouth. At forty minutes past 8, Mr. Craig proceeded to restore Gill to the ordinary state, by blowing on his eyes and head, for about a minute and a half, during which Gill shifted uneasily the position of his head; on awaking he declared he felt very well; was disturbed by something soon after he fell asleep; was confused at something else; does not recollect anything being done to him; misses a tooth now, but had no feeling when it was extracted. The disturbance was "irritable" but not "painful;" thinks it was "feeling," not "passion." Had no pain in his mouth. Is glad he has got rid of the tooth. After extraction the tooth was seen by various gentlemen present.—At 50 minutes past eight, the pulse was reported by Mr. Riach to be eighty. After 51 minutes past eight. Mr. Nasmyth having closed the sides of the gums, Gill said he now felt pain, and left the room.

Extracted from the minutes written during the operation by ROBERT COX.

Edinburgh, 2nd. May, 1843.

PERISCOPE OF THE WEEK.

On Menyanthin.—The presence of coloring matter, sugar, and organic substances, soluble in alcohol, and the decomposition by heat, are the chief difficulties to contend with in the preparation of menyanthin. The following method will be found to be the most advantageous:—an alcoholic extract is to be prepared from the juice of the plant by maceration; the spirit is to be distilled off; the aqueous residue to be filtered and fermented with yeast, to remove the sugar; and to each pound of the herb, two ounces of an aqueous solution of oxide of lead are to be added. This will assume a yellow colour, and the fluid will appear but slightly yellow, with a greenish tint. Filter; remove the excess of lead; refilter and evaporate, by gentle heat (under 60°), to the consistence of an extract. This extract is to be covered with alcohol, of ninety-five per cent., and to stand for two or three days; the brownish yellow solution is to be separated, and mixed with animal charcoal, filtered, and the spirit removed by evaporation over sulphuric acid, as distillation causes a discoloration. The yellow, pale, syrup-like mass thus obtained, is easily dissolved in water; and on the addition of more water, a separation of a few oily resinous drops ensues, which are to be removed, and the solution evaporated *in vacuo*; thus a white mass is obtained—partly crystalline, partly amorphous. Menyanthin has a bitter taste, readily becomes brown by heating, with an absorption of oxygen, and is decomposed by heat, like all vegetable bitters. It is soluble in alcohol, alcoholic æther, and water, but not in pure æther. An aqueous solution is rendered turbid by alkalies, owing to the presence of salts of lime; it undergoes no change with ammonia, chloride of barium, and acetate of lead. With chloride of tin and tincture of galls it is rendered slightly turbid. With chloride of platina it forms a yellowish precipitate; with the salts of mercury and sulphate of copper a white, and with sulphate of iron a yellowish precipitate; the latter is sulphate of lime. Menyanthin, there forms no combination with metallic oxid

On Rad. Ginseng.—The Jinseng (says the Chemist) is obtained from a species of Panax, resembling the Panax quinquefolius, probably. The name given to the plant means "human powers." It is a perennial plant growing in Mandschuria, on the Shanntan range of mountains in Dauria (?), Korea, and some parts of China, as the province San-ssi, on the north side of the hills, where it is found wild in moist places, and attains the height of from 2 to 3 feet. The root is about 2, 3, 4 inches in length, and one in thickness: it resembles the carrot. The stem is striated, without branches, and of a red colour near the root. The leaves, from four to six of which surround the stem, where they form sheaths (bracteal), are simply pennate. The leaflets, of which there are five on each leaf-stalk, are ovate, and broad at the apex, with serrated edges, reticulated, and of a pale green colour. The flower-stalk is long and green, the inflorescence a simple umbel, whose stalks are thin and of a red colour; the calyx and corolla consist of five sepals and petals (Meyer), the ovarium consists of two carpella, the style is filiform, the stamina are filiform, and have two small round anthers; the fruit is a berry (Meyer) of a red colour, and contains two seeds of the size of mustard-seed.—The officinal part of the plant is the root. It differs in appearance according to the country from whence it is brought; in Korea and China it is white, corrugated when dry and covered with a powder resembling starch. In Mandschuria and Dauria, it is yellow, smooth, and transparent, and when cut resembles amber. The Mandschurian variety is said to be more active than the Korean, to which it is preferred, and bought at the value of gold; it is sweetish in taste; or has a sharp aromatic taste and odour (Meyer.) In Mandschuria roots are very rarely dug up, which resemble those of the mandrake, in bearing a fanciful resemblance to the human figure. These roots are called gin-schen-gin (literally meaning a root resembling a man), these are all the property of the celestial emperor, and on being found are immediately forwarded to the court, where they are only to be met with in the possession of the higher officers of the state. The Chinese superstition, that uninterrupted good fortune will remain in a house which contains these roots, raises their value beyond that of money, and they are transmitted as a legacy from father to son. The fresh root is said to be very sensitive of atmospheric influence, by an exposure to which it loses all its medicinal properties; it is, therefore, dug up with the greatest caution, brought home hermetically sealed, and dried in an oven by gentle heat. In this process of drying, the Mandschurian variety becomes transparent. On the Russian borders of China, in the neighbourhood of Nertschink, towards the source of the Amur, by the meeting of the rivers Schilka and Argun, the Mongols are said to find the root for importation into China, in which case it is probable that Ginseng may be met with in the Russian territory. The botanist Turschaninow has not yet been able to discover it on the Amur, as far down as Albasin. The fable of its being found wild in Dahuria, is owing probably to a mistake in not distinguishing it from other roots *e. g.* of the Stellera Chamaejasme, Euphorbia Palasii (Meyer.) In China, the Ginseng root is used as a tonic in phthisis, and all diseases arising from debility with great success; further, as a stimulant and powerful excitant in cases of depression; in fevers and inflammations it is said to be very pernicious, or even deadly. A decoction is administered by the Chinese doctors with other remedies, or in chicken and mutton broth. The Chinese assert, that patients who were unable to leave the room, after taking one dose of Ginseng, were capable of travelling from three to four werst, and that the life of a dying man may be prolonged by it for four or five days. The following is the formula according to which it is prepared for use, as communicated by a member of the Pharmaceutical Society of Lisbon, resident in Macao:—

℞. Rad. Ginseng, ℈iij.
Zingib, rec. ℈j.
Aq. font. ℥vj.

coque leni igne in balneo mariæ per horas duas tunc infunde

Cinnamomi acuti ℈j.

cola. d. s. ft. doses iij.

On Rhubarb. By Fr. Calan, Apothecary at Kiachta, in the Rhubarb Factory. The general use of Bucharian* rhubarb in Europe and other parts of the globe, has directed the attention of the learned to this therapeutic agent; and many have given themselves much trouble to gain more certain information of the source whence it is derived, of its introduction, by barter, into Kiachta, and its use in the territories under Chinese dominion. All that we yet know of the rhubarb plant or its origin is defective and wrong; every sacrifice to obtain a true plant, or the seed, has been in vain; nor has the author been enabled to procure it. A severe prohibition from the Chinese government, who fear that the rhubarb plant may be introduced into our territories, and the trade in consequence cease, prevents all possibility of eliciting the truth. The author, however, from his appointment, has had opportunities of making enquiries of the Bucharians, who are employed in transporting the rhubarb, into the source and preparation of the root, and into the cause of its decay at the place where it is collected, by observation on the dried rhubarb; and thus to effect some improvements in the examination and selection of this remedy. The rhubarb brought into Siberia grows wild in Chinese Tartary, especially in the province Gansun, on hills, heaths, and meadows, and is generally gathered in summer, from plants of six years of age. When the root is dug up, it is washed to free it from earthy particles; peeled, bored through the centre, strung on a thread, and dried in the sun. In autumn, all the dried rhubarb, collected in the province, is brought in horse-hair sacks, containing about 200lb., to Sinin (the residence of the dealers,) loaded on camels, and sent over Mongolia to Kiachta, Canton, Macao, and partly to Pekin. All the rhubarb brought to Kiachta undergoes an examination, prescribed by the Imperial Russian Medical Council, according to directions of the Russian government. The selection takes place, for the rhubarb bartered for by Russian merchants, in the custom-house at Kiachta, and for that selected for the crown, in a house for that purpose on the Chinese borders.—In this selection the following rules are chiefly to be observed:—*a.* To select pieces obtained from dead plants, which are porous, of a grey colour, and, besides fibrine and oxalate of lime, contain little of the other constituents of rhubarb.—*b.* To select pieces that are small, derived from young plants, and which are of a pale colour, and without much virtue.—*c.* To select roots of other plants, which are casually or purposely mixed with the rhubarb.—*d.* To pare the rhubarb. This is done, first, to remove remaining portions of the bark and the upper part of the root*; and, secondly, to clean those parts that may be stained with the sweat of the camels.—*e.* To

* The name "Bucharian" is derived from the circumstance of a few Bucharian families having been the dealers and purveyors to the Russian crown for a century.

perforate all pieces, and examine their interior. This examination is most necessary, as many pieces, from the rapid drying in the sun, are perfectly sound externally, and have the smell and taste of a perfect root, but are decayed in the interior. This internal decay† is chiefly found in round or cylindrical, rarely in flat or semi-circular pieces. The rot shows itself at first as little black points, of the size of a pin's head, which increase according to the quantity of moisture in the pieces, and at last form an heterogeneous dark brown or green mass. In cylindrical and round pieces this mass assumes the form of an egg; in the flat pieces, on the other hand, the rot forms parallel strata, of which we find one, two, or more, according to the size of the piece. As in the round, cylindrical, and oval pieces the rot is not always in the centre, it is prescribed, for greater accuracy, not only to perforate such pieces, but to break them through..—*f.* To dry those roots again which may be moist. As the rhubarb taken in exchange by the crown is not permitted to be imported into the European part of Russia, except in quantities of 1000 puds or 40,000 pounds, the roots approved of, after the examination, are packed in bags and placed where there is a free current of air, until the necessary quantity has accumulated, which is then packed in cases capable of containing 4-5 puds. The chests are covered with linen and pitched, then sewed into skins, and marked with the year of the importation of the root and sent to Moscow. The reason for this care in preventing the access of air where it is warehoused, is the affinity of the root for water, which much impedes the selection and packing of it. Dry rhubarb is proved to have hygrometrical properties, to become moist a few days before rain, and to become dry with the return of fair weather; it is also certain that rhubarb only can be preserved with a free access of air, for if it is hermetically packed it loses its colour and peculiar odour. The packing, therefore, in pitched chests, is only a precaution on the part of the Russian government to prevent the root from becoming wet by rain, or the overflowing of the rivers, in the transport from Kiachta to Moscow in winter. The barter of rhubarb is carried on by the Russian government, under a contract made with Bucharians at Kiachta for ten years, and confirmed by the Chinese government. According to this contract, the Bucharians undertake to furnish a certain quantity of rhubarb annually to the Russian crown, for a certain quantity of goods of a certain quality, and to deliver up all rhubarb not approved of, without remuneration, and permit it to be burnt by the Russian government.—Bucharian rhubarb is used by the Mongols, Mandschurians, and Bucharians, as an universal remedy. The internal use with them is the same as with us, only that they administer it in very small doses, and always combined with mineral substances. Externally it is used against caries of teeth, as an antiseptic and astringent in wounds and ulcers, for man and cattle. In China, another sort of rhubarb is preferred to the Bucharian, it grows wild, and is cultivated in the province Si-tschu-an, whose name it bears: it is met with only in pieces of 2-3 inches in length, and one to one and a half in thickness. The Chinese ascribe to the Bucharian variety drastic qualities, which lead them to prefer the Si-tschu-an variety; the Bucharian they only administer in rare cases, and in very small doses.

* The internal decay is not only dependent on the rapid exsiccation of the root, but they were most probably decayed when gathered.

† Rhubarb was formerly imported with the bark, but the weight was found by the Bucharians an objectionable inconvenience in the carriage of it, and they now take the bark off when they gather it, but so imperfectly, that a second operation is necessary.

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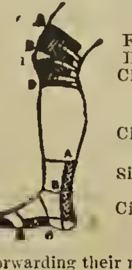

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No. 190. Vol. VIII. LONDON, SATURDAY, MAY 13, 1843. PRICE FOURPENCE. STAMPED EDITION, 5d.

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SUMMARY.

ON THE LAWS OF THE DEVELOPMENT OF ORGANS; OR TRANSCENDENTAL ANATOMY APPLIED TO PHYSIOLOGY.

By E. R. A. SERRES, Member of the Institute of the Academy of Medicine, Professor to the Museum of Natural History, Paris, &c., &c., &c.

Summary.—*Primitive excess of the organs arising from the three layers composing the germinative sacs—Primitive excess of development of the cerebro-spinal axis;—its reduction to its normal proportions—Original hypertrophy of the heart and of the large vessels—Equilibration of the sanguiferous system, of the liver and of the abdominal organs—Influence of the position of the liver upon the position of the thoracic and abdominal organs—Application of the principle of equilibration of the organisms to the development of the stomach in the ruminantia—Distinct stages presented by this law of equilibration in the vertebrata—Excess of development of the external germinative layer in the crustacea, in insects and in the annelida;—atrophy of the mucous and vascular layers in these animals—Explanation of the individuality presented by the embryos of all classes, from the first delineation of their outlines.*

Among the numerous consequences resulting from the centripetal order of formations, and from the primitive independance of the organisms, we must place in the first rank that alternate *balancement* which becomes established between the organs to produce that state of *equilibration* and harmoniousness necessary to the maintenance of life. Since the time of Aristotle, Hippocrates, and Galen, all physiologists have acknowledged, without being able to explain, this perfect agreement of the organisms one with another. Anatomy having then failed in the resolution of this question, we will attempt its explanation by means of organogeny. We will bring to its consideration the interpretation of facts; and that we may render it still more easy of comprehension, we will exhibit the products of the three layers of the germinative sacs upon three distinct plans or systems. The first system, as we have seen, proceeds from the external layer; it commences the developments of organogeny. The result of this development of a single system is shown in the exaggerated dimensions of the cerebro-spinal axis, of the vertebral column, and of the cranium at this period; all the formative action is in fact concentrated upon these apparatus. As soon as the second system appears, the formative action, abandoning in part the organisms of relation, directs its chief energy towards the organisms of circulation, which in their turn acquire disproportionate dimensions. Lastly, soon afterwards the mucous layer commences its formations, when the organisms of nutrition, or the third system, in their turn absorbing the formative action, become developed in excess. Thus do these three systems of organisms arising from the three germinative layers become, each in their turn, developed in excessive proportions. But what is most remarkable, is that the normal excess of development of the organisms of the second system leads to the diminution of those of the first, reducing them to their known proportions; so, in like manner, does the normal excess of development of the organisms of nutrition reduce the proportions of the organisms of circulation. This primitive excess of development, which constitutes the basis of the *law of equilibration of organisms*, occurs throughout the whole system of organisation. Each organ commences by exaggerating its proportions. It is subsequently reduced by the excess of development which is manifested in other parts, so that, on the completion of the formative action, every thing is constituted in the relations fixed in the adult.

We must here, however, particularise this law of equilibration, lest by too great a generalisation its object be misunderstood. Let us take as examples the cerebro-spinal axis, the heart, the intestines, and the liver: the cerebro-spinal axis, inasmuch as it is the principal organ of the developments of the external layer of the germinative sacs; the heart, as the principal organ of those of the vascular layer; and the intestines and the liver, which are the principal organisms of the mucous layer. In this way we shall have a type of each formative layer, and shall be enabled to appreciate the reciprocal action by which they are influenced.

We will now commence with the cerebro-spinal axis of the nervous system. Its amplitude is from the commencement of the developments so great, that its chords are not only twisted into a spiral form, so as to occupy the least possible space, but we likewise find the vertebral canal and the cranium opened or separated, both anteriorly and posteriorly, so as to enlarge the cavity which should contain it. This exaggerated development continues up to the period when the rudiments of the heart, being united together so as to form a canal doubled upon itself, give to this organ the appearance of a large tumour. Now, the effect of this enlargement of the heart is to reduce the cerebro-spinal axis, at first untwisting its cords, and then diminishing the containing cavity, which thus allows the vertebral canal and the cranium to become united in front. However, its volume still exceeds the proportions which ought to constitute its normal state, for it still protrudes posteriorly from the cranium and the spinal canal, which are unable to contain it entirely. A further reduction in volume is produced when the cavities of the heart, from their inordinate enlargement, give to this organ those exaggerated dimensions which are only subsequently found in a morbid state. This excess of development of the heart causes the cerebro-spinal axis to be reduced in volume, so that the cephalo-spinal canal becomes closed behind, as it already was in front, and thus constitutes a cavity in which the central and fundamental part of the nervous system is definitively lodged. Such are the facts exhibited by organogeny. If we compare the organs one with another, we see evidently that the one seems to acquire what the other loses; that the reductions which take place in the cerebro-spinal axis are accompanied by an increased development of the heart, and so on. But we may also perceive that this is in reality but a transposition of the formative action from the external layer of the sacs to the middle or vascular layer; so that one may explain this fact by saying that the exaggerated formation of the organisms of the vascular layer causes the organisms of the external layer to be reduced within their natural limits.

If the equilibrium be, then, re-established in the cerebro-spinal axis by the exaggerated development of the heart and large vessels, by what means are these latter organs, in their turn, caused to re-enter within their natural dimensions? I may, in the first place, state that the dimensions of the heart are so exaggerated at this period that it is situated beyond the cavity of the chest, in the same manner as the cerebro-spinal axis projected beyond the cavities of the vertebral column and of the cranium. Let us now notice what takes place at this stage in the order of developments. The most marked phenomenon which shows itself at this period is the formation of the liver, the principal organ of the third layer of the germinative sacs, which is to the mucous layer what the heart is to the vascular and the brain to the serous layer. Now, every one knows that in the embryo the liver is so prodigiously developed that it alone completely fills up the abdomen, and at the same time pushes up the intestines into the umbilical cord, thus maintaining the abdominal parietes greatly distended. What then results from this great hypertrophy of the liver? The atrophy of the heart. The heart, in fact, diminishes in proportion as the liver increases; it becomes reduced to its normal dimensions in a way exactly similar to that by which the cerebro-spinal axis was returned within its natural limits by the vascular developments. The formative action is thus a second time displaced, passing from the vascular to the mucous layer, as previously it had been displaced from the external to the vascular layer; and in the same way as the reduction of the cerebro-spinal axis enabled the cephalo-spinal canal to become closed at first in front and then behind, so does the diminution of the heart enable the chest, hitherto open anteriorly, to become definitively closed by the re-union of the bones of the sternum. Thus do we find the whole of nature constantly subjected to the same process of development, the same organogenic laws, the same unity of method; an evidence of the all-powerful hand which guides and directs it towards its ultimate constitution.

From this equilibration of the head and of the chest, let us pass to that of the abdomen. What becomes of the intestines which are projected from this cavity, and provisionally lodged in the umbilical cord? How do they re-enter the cavity which they ought to occupy in after-life? How do the abdominal parietes become hermetically closed? These facts are now rendered more easy of demonstration, from the greater age which the embryo has acquired. This displacement of the intestines has been produced, as we have already said, by the enormous size of the liver, which alone has sufficed to fill up the abdominal cavity: the protrusion of the intestines is thus a necessary consequence. Now, the exaggerated dimensions of the liver ceasing, its diminution creates a void within the abdomen, and this void is immediately filled up by the intestines, which are withdrawn into its interior. At the same time the abdominal parietes, being no longer distended by the liver, follow the movement of the intestines, and arriving in immediate contact, become united along the median line, in a similar way to what we have seen with the bones of the sternum. The closure of the abdomen is then but a repetition of the closure of the thorax, as the latter in its turn is a mere counterpart of that of the spinal canal and of the cranium. But these evidences of equilibration give no explanation as to the reason of the so striking diminution of this organ. This reason is found in the excess of development first assumed by the stomach and then by the duodenum, an excess of development subsequently extending through the small to the large intestines. This successive enlargement of the various portions of the alimentary canal reduces the hepatic organ to its normal condition in the adult; it at the same time produces in the various parts of this canal those exaggerated dimensions which at first make the human stomach resemble that of the ruminantia, and then descending to the small intestines which it exaggerates to the size of the larger ones, it finally disappears in the terminal region of the intestinal canal. What sagacity is exhibited in this successive *balancement* in the dimensions of the various organisms! What simplicity in the me-

chanism, and what grandeur in the result deduced by nature from this harmonization of all the parts of the embryo! Must we not admire the simplicity and the constancy of this contripetal movement acting from the periphery towards the centre, forcing as it were the organs towards the cavities which they ought to occupy, and immediately that they become thus seated, enclosing them around by walls which definitively confine and protect them.

Now, this law of equilibration is every where reproduced; it is repeated in the most minute details of the organization, and may be perceived even in the elementary tissues of parts. We shall here simply notice its effects in the splanchnic cavities, and first of all in the cranium in reference to the brain. In this organ, the excess of development first appears in the optic lobes, the exaggerated development of which, being persistent in some entire classes, atrophies the surrounding parts;—sometimes the cerebellum, as we find in most reptiles, at other times the cerebral hemispheres, as in almost all fishes. In the mammifera, the excess of development extending to the cerebellum as well as the cerebrum, the optic lobes are, on the contrary, reduced in their dimensions. In birds, the equilibration is again different, the optic lobes maintaining a marked predominance; but as the constitution of their brain is somewhat more approached to that of the mammifera, we no longer find these lobes upon the upper surface of the brain; they undergo a demi-rotatory movement causing them to project upon the sides, and drawing the cerebellum into closer connection with the brain. The optic lobes, then, may be regarded as the regulator of the developments or equilibration of the brain in vertebrated animals. But the influence of the evolution of one part over the evolution of others is no where more marked than in the abdomen and thorax, by reason of the mobility of the organisms contained in these cavities. The liver, which governs all the other organs, subjects them as it were to its own evolutions. We have already seen that, during its exaggerated development, the abdominal cavity being filled up by this organ, the intestines become pushed forwards into the cord; we have also seen that, as soon as its dimensions become reduced, the heart first, and then the intestines, re-enter their respective cavities. But its influence does not cease here, for these organs will be found to be subservient to all the subsequent evolutions of the liver. When in fact the heart has returned within its proper cavity, the liver, still hypertrophied, occupies the median part of the abdomen, without inclining either to one side or the other. The heart rests in the middle of the thorax, maintained in position by the horizontal surface of the diaphragm which is applied directly over the convexity of the liver. During the subsequent decrease of the liver, the reduction of volume taking place principally in the left lobe, the right lobe maintains its size, and becomes buried within the hypochondriac region of the same side. The heart, which rests, through the medium of the diaphragm, upon the convex surface of the liver, naturally follows the inclination of plane which is presented to it. In proportion as the left lobe of the liver diminishes, the heart following its movement sinks with it, it glides from right to left and becomes fixed in the position given to it by this evolution of the liver. Hence it follows, that the inclination of the heart towards the left side is a mere repetition in the chest of the inclination of the liver in the abdomen. We likewise find that in those mammifera where the heart does not rest in this direct manner upon the liver, this inclination is wanting, so that in them the heart always occupies the middle of the chest. It is the same with the position of the stomach and of the spleen. The liver, becoming placed on the right side, draws towards it the small extremity of the stomach, thus necessarily forcing the large extremity to which the spleen adheres into the left hypochondrium. The right lobe of the liver thus draws with it the right side of the heart, the venæ cavæ, the vena azygos, the duodenum and the cæcum, whilst the left lobe is accompanied by the left side of the heart, the thoracic aorta, the stomach, the spleen, and the sigmoid flexure of the colon. What indubitably proves that the evolution of these organs is subordinate to that of the liver, is that if the liver be transposed, if it be seated on the left instead of the right side, as we sometimes find in man, then are all the other viscera transposed also, and all, without exception, become displaced or turned round in accordance with the liver.

As an example of the equilibration of particular organisms, I may instance the development of the stomach in ruminating animals. We know that in the ox and the sheep this organ is composed of four cavities of unequal sizes; these cavities, being arranged according to the order of their size in the adult animal, are the *first* stomach (*la panse*) the *fourth*, (*la caillette*), the *third*, (*le feuillet*), and the *second* (*le bonnet*.) But this order is entirely changed in the course of their embryogeny. The *second* stomach is the one which originally presents the most exaggerated dimensions, then the *first* stomach, subsequently the *third*, and lastly the *fourth*, hitherto inferior to the other cavities, in its turn surpasses them all in size. We thus see that it is in consequence of a successive excess of development in its various parts that the stomach of the ruminantia acquires those respective dimensions which its four cavities present at the time of birth.

The law of equilibration presents then two distinct stages in the vertebrata: the first relating to the *balancement* of formation of the germinative layers and of the general organisms arising from them; the second corresponding to the formations of the germinative layers and of the organisms themselves. Now, it is established,—first, that the germinative layers enter successively into action; secondly, that they preserve the independence resulting from their isolation; thirdly, that the external layer is the one which commences the developments. It is also established that the formative action, (whatever may be its principle,) is sometimes seated in one germinative layer, sometimes in another, and that the effect of its presence upon the one layer is to exaggerate its products by atrophying the products of the other layers. The immediate consequence resulting from these facts is that the more the germinative layers are developed, the stronger will be the organisms which are derived from them. In the superior vertebrata, the three germinative layers having an equal force, an equality of development is preserved in the resulting organisms. But suppose that the case were different; suppose that one of the layers predominated over the others, it is evident that the organisms arising from the dominative layers would be developed in excess, whilst those arising from the subjected layers would, on the contrary, be atrophied. Such is the case with invertebrated animals, in which the most general character consists in the inequality of the fundamental organisms as compared with the equality of development which exists in vertebrated animals. The crustacea and insects are characterised by the excess of development of the external germinative layer, so that the organisms derived from it, are carried to so great a degree of exaggeration, that the organisms of the vascular and mucous layers are constantly maintained at their minimum of development. In insects, independently of the ordinary organisms of the external layer, this membrane sends prolongations into the interior, which, under the form of *tracheæ*, extend into the substance of all the organisms, and establish a sort of aerial circulation. But along with the exaggerated organisms of the external layer, we find so great an atrophy of those of the vascular layer, that the dorsal vessel alone remains as its representative; and even at the present day some difference of opinion exists as to the true nature of this vessel. With respect to the organisms of nutrition, their slender proportions have at all times struck the attention of physiologists. Beyond insects we have merely, in this respect, certain radiated animals, as the *asteria* and the *rotellina*, in which the nearly solid tubes are almost devoid of viscera. The crustacea, in like manner, derive the principal conditions of their existence from the excess of development of the external germinative layer. But in them we may already observe a more marked development of the organisms of the vascular and mucous layers, which, however, never exceed that of the primitive embryonic state of vertebrated animals. Lastly, the annelida present on a small scale that excess of development of the organisms of the external layer, which has been carried to such a point in the two preceding classes.

The articulated animals are then characterised by the inequality of development of the organisms arising from the different layers, and in them every thing seems sacrificed to the productions of the external layer. Hence, on the one hand, that complication of the external organisms, that multitude of motor-organs which we find in them; and, on the other hand, the simplicity of their internal organisms, which, remaining always but feebly developed, undergo neither those metamorphoses, nor those evolutions which so greatly complicate the arrangement of the viscera in the superior vertebrata. In the course of the incubation of birds, we observe that at the period when the organisms of the external layer predominate, the embryo is elongated similar to the annelida; neither the thorax nor the abdomen can then be traced. When, at a subsequent stage, the vascular layer exaggerates the dimensions of the heart, this organ being pushed beyond the cavity of the chest, the thorax is still but imperfectly defined; but when the mucous layer commences its action, the liver being developed in its turn, we then find a spacious abdominal cavity which, united with the head of the chick, renders the animal very similar to the crustacea in regard to its general arrangement, and perhaps equally so in reference to the exaggerated size of the liver. Finally, when the heart has re-entered the cavity of the chest, the chick presents three great divisions in the trunk, the head, the thorax, and the abdomen, divisions resembling those of insects. Hence, we see that the primitive division of the trunk of the embryonic chicken, or its division into head, thorax, and abdomen, repeats to a certain point that of the annelida, of the crustacea, and of insects; and, as in the two first classes, the cause of this fact lies in the arrangement of the internal organisms.

We thus find, from the excess of development of the organisms of the external germinative layer in the articulata, and from the mode of development of the organisms of the vascular and mucous layers, that these latter organisms are perfectly sheltered and protected, and that their displacement or hernia is next to impossible. But if the contrary existed, if the mucous layer exaggerated its developments, and the external layer reduced its own, the inverse would then take place; that is to say, the organisms of nutrition, exaggerated in their development, would no longer be protected, nor contained by the organisms of the external layer. Such is, in fact, what takes place in the embryos of the superior vertebrata, when the exaggerated developments of the vascular and mucous layers have caused their organisms to surpass the requisite proportions. This displacement of the viscera, which is but transient in the embryos of the vertebrata, would then become the permanent and normal state of those invertebrated animals which might present this condition. Now, such is precisely the arrangement which is presented in the greater number of mollusca; in them, the excess of development of the organisms of the mucous layer, maintains in a permanent atrophy the development of the organisms of the external layer; hence, the irregularities of position assumed by their viscera, which seem destitute of any fixed locality, and without any constant bond of union or circumscription. It is not my intention to pursue further this subject of the equilibration of the organisms in the invertebrata, my object being merely to show its relation with that of the primitive state of the embryo in the vertebrata. Too much stress, however, cannot be laid on the fact, that in the mollusca, as in the articulata, the external or serous layer is the one which constantly commences the developments: the peripheric parts, or those pertaining to the life of relation, are invariably the first to appear; whilst the organisms of nutrition, or those arising from the mucous layer, are not developed till some time after. It is this succession in the organisms, so striking though so little known before the present day, which we have designated under the name of the centripetal law of developments, or of eccentric development. Before proceeding further,

there is one fact to which we must refer, and which has been made an objection to the centripetal law, although, indeed, it can be explained by no other principle; this fact is that of the individuality presented by the embryos of all classes, and of all families, from the first delineation of their outlines. The embryo of a bird is itself a bird, that of a fish a fish, &c., the embryo of man is a human being, from the first appearance of their organisms. This fact so often remarked by anatomists has not hitherto been explained. But who at the present day can doubt its cause? If the external layer of the germinative sacs commences the developments, if it is the first to be produced, do we not see that this precocious individualisation of the embryos is a necessary consequence? Do we not perceive that the general configuration of the animals results as necessarily from this fact as their individualisation? And shall we not further find in this an explanation of that principle which I have recently developed, namely, that the differential characters of beings are external, whilst their characters of resemblance are internal? These general facts are thus dependant one on another, and are essentially derived from the centripetal action of developments.

PRIVATE COURSE OF OPERATIVE SURGERY.

By J. NOTTINGHAM, Esq., Member of the Royal College of Surgeons of London.

CIRCULAR AMPUTATION OF THE LEG.

The integument of the leg is very close upon the tibia, so that in turning it up towards the knee we must be careful to hold it firmly between the forefinger and thumb of the left hand, to put it well on the stretch, and to avoid puncturing it when we liberate its cellular connections with the parts below. Suppose we operate on the right leg, the surgeon is placed outside it, the knife passed under the limb, and then brought over it towards the operator, then applied to the outer surface of the part, and evenly carried round it to divide the external tegument.

The assistant retracts the skin, and the surgeon, with the point of the knife, sets it free all around. This is best done first at the sides, afterwards before and behind; the edge of the divided integument being turned over and sufficiently reflected back, the knife is applied to the division of the muscles, its chief application in this step being behind, and at the outer side of the bones.

The linen retractor being adapted, the surgeon applies the saw with gentle movements over the two bones. It is better to complete the division of the fibula before that of the tibia, and during the sawing the assistant should turn the leg towards the operator, so as to favour as much as possible the easy division of the bones. In sawing the bones of the fore-arm it is better to finish the sawing with the ulna, which is more firmly fixed than the radius, and hence supports the movements of the saw well, until the radius is completely divided.

In the dressing of this case, as in all others, great care is required, if we wish to have union by the first intention, and a neat and good stump.

FLAP OPERATION.

When we have performed the flap operation, the line of union must be suited to the shape and direction of the flaps, so that we have not the same choice in making it antero-posterior, transverse, or oblique, as in the circular method.

A double edged, narrow, and strong catlin is required in the operation on the fore-arm or leg, but for the former it need not be so strong as for the latter. A single edged instrument will do for the operation on the arm or thigh, but to facilitate the transfixion of either limb, its cutting edge may be two-fold to the distance of an inch or two from the point.

Considerable care is required in taking up the arteries after the flap operation, as they are often cut in an awkward and oblique direction, presenting oval sections of their calibre on the exposed surface of the stump; and upon the whole, the flap operation is perhaps more favourable to the occurrence of secondary hæmorrhage than is the circular method.

FLAP OPERATION OF THE ARM.

Right side; the surgeon stands outside the limb, (the tourniquet being applied) he seizes its anterior fleshy half between the fingers and thumb of his left hand. This being somewhat raised from the bone, the knife is passed through, carried downwards a little way, close to the bone, and then brought out of the limb, the length of the flap being suited to the size of the member.

The knife is now carried under or behind the bone, and the posterior flap formed in the same manner as the anterior; the instrument is then turned round the bone dividing the muscular fibres adhering to it, and also the periosteum, when the bone is sawn close to the base of the flaps.

FLAP OPERATION OF THE THIGH.

In the last noticed operation, the patient is supposed to be in the sitting posture; in this, however, he must be placed on a firm table—the trunk supported, the pelvis steadied, and the sound leg held out of the way of the surgeon, who stands outside the limb if we suppose the right to be operated on; the knife is pushed steadily through the thigh in front of the femur—carried downwards and then forwards, to slant it gently out; it is next applied to the formation of the opposite flap, being passed closely under the bone, carried downwards a little way, and then brought out from the limb, in such direction as to cut a flap, corresponding with the other in shape and extent; the flaps being raised by the assistant, the surgeon now carries his knife around the bone to divide the adherent muscular fibres and periosteum, previous to the application of the saw with which the femur is next divided.

Both the operations just noticed are very simple in their character, at least as far as the mere mechanism of their performance is concerned, but they are very serious undertakings for the patient, the shock which the constitution feels from them is often very great, in some instances sufficiently so to destroy life; it would therefore be almost useless to say that every possible effort should be made to diminish the suffering and lessen the danger connected with them; the surgeon before he allows the knife to enter the limb should assure himself that the arterial circulation is under command, that the patient is favourably placed for the performance of the operation, and that every part of the apparatus to be employed is well arranged and in good order.

The arteries should be well secured and as speedily as possible after the removal of the diseased part of the limb, and when the patient has been put to bed, an intelligent assistant should remain beside him, who must be constantly on the alert, and cause the surgeon to be called if there be any good reason to think that secondary hæmorrhage is occurring.

FLAP-OPERATION OF THE FORE-ARM.

Raise the integument and anterior muscles with the fingers and thumb of the left hand, pass the narrow catlin through this aspect of the limb close upon the anterior surface of the bones, cut downwards and then bring the knife evenly out, taking care to make the end of the flap of a regular shape; the knife may then be passed behind the bones and the posterior flap formed, so as to correspond in shape and size with the other. Let the assistant raise the flap towards the elbow and then the surgeon may turn the catlin round the bones, applying it so as to catch aud divide the remaining muscular fibres which adhere on every aspect, not forgetting to take a little extra pains with the clearing of the interosseous space; the bones are now te be sawn across.

FLAP OPERATION OF THE LEG

Is of two kinds, for the flaps may be cut from the front and calf of the limb, or from its two sides; in the former case the anterior flap of integument is short, but the posterior flap large, fleshy and long, is brought from behind forwards to cover the divided bones and meet the shorter flap made from the integument over the fore part of the leg.

In the other method there is flap of skin but no flap of muscle; two crescentic incisions of the integument are made, their horns meeting over the crista of the tibia in front, and at a point directly opposite behind; these lateral flaps being dissected up and held by an assistant, the surgeon turns his knife around the limb to divide the muscles as in the circular operation, after which the bones being sawn the operation is completed.

This operation has not in reality much of the character of the flap-operation, for the lateral flaps, being made with the bistoury and the knife applied to the muscles, as before indicated, there is no stabbing of the member. as in the common operation with flaps; and as this is already noticed sufficiently to enable us to understand it, we have only to notice more particularly the first operation, which takes its main flap from the calf of the leg.

In this operation a crescentic flap is cut on the fore part of the leg, the convexity towards the foot, and supposing we operate on the right leg, the knife is applied on the inner side of the limb and carried towards the outer, so as to form this anterior flap from the front of the bones; then to form the posterior flap from behind the bones, the knife is passed through the limb behind them from the outside to the inside point of the first incision, whence, being carried downwards, a flap of about four inches in length is formed from the fleshy mass of the back of the leg; it is to be remembered the anterior flap is very short, long enough only to hang over the projecting piece of tibia, and to unite with the other brought forward from the calf.

In sawing the bones, it is better to complete the division of the fibula before the saw has passed through the tibia.

Various opinions are entertained respecting the position which the surgeon should take—some preferring the outside, others the inside, of the limb to be removed. This matter may, however, be safely left to the taste of individual operators.

In operating on the dead subject, as well as on the living, in the manner last described, I have always found it most convenient to stand outside the right limb, but inside the left; in the latter case, the right knee of the patient may be bent, and the sound leg fastened to the table, so as to be out of the way of the surgeon.

In addition to the previous remark about the sawing, it may be stated that the saw enters the tibia first, and having made two or three strokes upon that bone, it marks its groove on the fibula (never, of course, leaving the tibia,) which, in the process of sawing, is completely divided before the greater bone is cut in two.

The high operation of the leg, near to the knee-joint, is no doubt a better operation than amputation *at* the knee-joint. In this operation, however, we should avoid cutting the ligamentum patellæ; and the short piece of fibula beneath the outer part of the head of the tibia had better be left, lest the removal of it should open any synovial communication with the knee-joint..

In forty subjects Lenoir met with four cases, (one in ten), where a large communication existed between the articulation of the head of the fibula and the knee-joint, and in half of the cases a sort of diverticulum was sent from the synovial membrane of the knee-joint towards that of the head of the fibula, and approaching it so nearly, that it would probably have been opened in any attempt to take away the last mentioned piece of bone.

Generally speaking, the amputations both of the leg and thigh, should be so performed as to leave short rather than long stumps.

Amputations of the leg for various reasons occur most frequently in the labouring classes, and to a labouring man it may be readily understood that a long stump would be a great inconvenience, for any artificial apparatus, which he could afford to have adapted to it, would be but a very inadequate support for his body. Where the operation has to be performed on an individual in easy circumstances—suppose for disease of the ancle-joint—it may be done below the middle of the leg, but from the experience of many surgeons, it would seem that this practice is not deserving of great recommendation. Malgaigne mentions the case of a young woman, whose leg had been thus amputated; she afterwards complained much of the weight of the artificial foot, and of its insecurity in walking, and said that were it not for the appearance of the thing, she would much prefer a wooden leg.

However, in the recent and beautiful work of

Professor Fergusson, a somewhat new aspect is given to this matter, the importance of which may be regarded as a sufficient apology for quoting his words. He says, "I have myself for several years been in the habit of preserving nearly a half of the leg, more or less, with the object of continuing the movements of the knee." After alluding to the graphic representations of stumps as made by the Professor, and of the artificial support applied to them, he continues, "I have seen a person thus provided, move about as freely as if no loss had been sustained, and from all I have witnessed of the practice, am strongly inclined towards it in most cases. Dr. Laurie, of Glasgow, who is one of the modern advocates for this plan, mentioned to me that one of his patients was frequently in the habit of walking twelve or fourteen miles a day with the utmost ease on such a limb."

The same author afterwards remarks, that in any case where such a stump does not support the weight of the body as well as it would be supported by the bent knee, it is easy to have the advantage of the latter, as the projection of the bent stump backwards is by no means considerable.

It appears to me that the practice recommended by Prof. Fergnson, may be regarded as a medium one; he does not amputate high in the leg—but, on the other hand, he does not amputate very low down, and in this way escapes some of the inconveniences of either extreme.

Further Remarks on Amputation of the Hands and Feet.

Our further observations on these subjects need not be carried to any great length, having previously gone over most of that which is important connected with the smaller amputations of the hands and feet.

For the fingers when amputated through the middle of the phalanges, the circular operation may be preferred as it leaves the neatest stump; a small knife is turned round the finger, the integument is turned back a little way, and the bone is divided with a fine saw; a transverse line of union may be secured by the careful application of the isinglass plaister.

In removing a portion of a metacarpal bone along with the finger it supports, an oval incision may be practised at the root of the finger, and a straight line of incision over the back of that portion of metacarpal bone, which has to be removed; the soft parts must be well cleaned from the bone, near to the part through which the saw has to pass, that the division of the bone may be easily effected without the scratching or lacerating of muscular fibres; a bit of card board, adaped so as to answer the purpose, is occasionally passed under the metacarpal bone, so as to protect the neighbouring structures from the teeth of the saw.

A portion of one of the metatarsal bones, with the corresponding toe, may be removed in a similar manner.

In these operations, in which the bones of the hand or foot are sawn, the lines of incision and the shape of the flaps are much the same as in the corresponding articular amputations of the same parts; care however, should be taken that every thing is done by what we may call clean cutting and sawing, and that the sensitive parts about the fingers and palm of the hand be not irritated or lacerated by awkward manipulation of the saw or other instrument, for we know the great danger of tetanus as well as of minor forms of constitutional and nervous irritations, which sometimes follow injuries of the hands and feet, to the danger of which we must not add by the bungling practice of surgery.

The smaller bones of the hands and feet may be cut with the bone forceps occasionally; but this instrument is apt to do its work badly, unless handled by one who is accustomed to the use of it; for this reason we have generally mentioned the saw in the preceding descriptions as the instrument to be preferred.

STRANGULATED HERNIA.—Mr. Collambell adds another to the number of cases of strangulated hernia cured without an operation by Dr. O'Beirne's plan; he had previously failed to effect a reduction by the taxis.

ON THE THREE FOCI OF THE PLAGUE, ALEXANDRIA, SMYRNA, AND CONSTANTINOPLE.

[Extracted for the Medical Times from "the Russian Journal of the Department for Foreign Affairs," being a Report by Dr. Jarozki.]

THE most important quarter of Alexandria in a medical point of view is Ras-el-tin. Not being protected from the strong southerly winds, it is subject to sudden changes of temperature: the soil is calcareous, and all the neighbourhood is devoid of verdure. It consists of Arabian mud huts, and on an area of 1,200 metres in circumference, 10,000 are living. All the dirtiness and misery of an Arabian village is combined in it. Not only in the suburbs, but even approaching them, we can form an idea of the uncleanliness of its inhabitants, from a nasty fetid smell which offends our nostrils. The whole vicinity is covered with filth and the decaying carcasses of animals.

Close to this village, and going to the palace of Boghos Bey, we perceive nothing but a row of graves. If we merely look at these graves, and the manner in which the dead are buried, we shall easily find, that here is the origin of those maladies, which devastate the country.

The Turkish district, which lies to the north, is pretty healthy: there are, however, corners where the water stands in pools and then putrifies.

The middle district is situated between the Custom House and the districts of the Franks. Here are all markets, the Turkish, Arabian, and Jewish. Dark, filthy dwellings harbour this oriental colony, composed of so many different tribes. If you pass through this quarter, you feel an unpleasant, unsupportable smell, which acts directly on the nerves. The streets are unclean, narrow, irregular, and have no slopes for carrying off the water, and thus combine all causes of unhealthiness. Near the village of Kom-el-dick is the Greek convent, whence, in 1834 the plague began to extend.

The next cause of unhealthiness, besides the filth of the inhabitants, is the dampness of the soil. All houses are built of stones, which have been obtained from the ruins of the ancient city. The narrowness of the streets prevents circulation of air, and the water which cannot run off from a surface quite level, becomes putrified: there is besides the existence of salt water, which is everywhere to be met with, on digging a few feet under the ground. It is true, there are some sewers to effect drainage, but being made by Arabs who have no idea of inclined plains, they are of little purpose. The sea and the two harbours also contribute to the unwholesomeness of the town. The shore is never cleansed, and everything which the waves cast up—sea-weeds, carcasses and other dirt—are left rotting on the spot. At every blowing of the easterly wind, a smell of putrid sea-water, combined with sulphuretted hydrogen gas, is felt, which spreads over the whole town. That it is really that unodorous gas, with which the air is filled, may be seen from its effect on silver, which here gets black, in a very short time. During the French expedition, the population of Alexandria was only 6,000, before the plague of 1834, 60,000 inhabitants, amongst whom were 20,000 Arabs, 6,000 workmen in the Arsenal, 12,000 seamen, 6,000 Turks, 3,000 soldiers, 4,000 Negroes and Moors, 4,000 Armenians, Kopts and Jews, 5,000 Europeans.

The Fellahs are the most miserable of all; they sleep on the bare soil without any bedding, and eat most unwholesome food. To look into their habits is to see that it is mostly they who generate disease. The large bellies of the children bespeak their state of health, and amongst them mortality is the greatest. Indeed the features of most of the inhabitants of Alexandria shew a bad state of health, resulting from the causes before stated. The meat sold in the markets, is mostly half rotten, and even the water of the cisterns is impregnated with foreign vegetable matter. The poor, also, eat too great a quantity of beans boiled in water without any seasoning, water melons, and such questionable food.

The climate of this city, therefore, considered by antiquity one of the most healthy, has become extremely deleterious even for the European. The constantly moist air, which prevails during the whole winter from November forwards, developes a variety of rheumatic and pectoral diseases. The thermometer falls at times below ten degrees of the Centesimal Scale, and at times, though very seldom, there is some snow. This cold combined with the dampness of the air is so deleterious, that to get cold is tantamount to a severe illness. In summer again, the sudden changes of temperature are to be apprehended, which, however, do not produce catarrh or fever, but diarrhœa ernenta, and inflammation of the eyes. As Strabo has represented, the climate of Alexandria was very healthy: it required all the agencies before enumerated to make it what it now is.

SMYRNA.

This city lies in a bay, partly in a valley, partly in an amphitheatre surrounding it. If the sewers and other courses of water were properly attended, it would be a very healthy place. Here, also, as in most oriental cities, the burial grounds are scattered over the whole city, a custom as immoral as deleterious for health. At times, the dead are not even regularly buried, but merely placed in a sort of cellar hole and the door blocked up with a few stones. It was in the quarter called Hagio Dimitri, close to the French hospital, and through which passes the main sewer, that the plague broke out in 1836. The Jewish quarter, in Smyrna, is like those of all the Orient, badly constructed and full of pools and stagnant water. Every house, or rather every shed, consists of a chamber under the ground and a shop above. The inhabitants, amounting to 6,000, are mostly poor and dirty: still, they did not suffer more than others from the plague, avoiding with their usual cunning, contagion, and resorting as if by instinct to even reasonable preventives. The following method is resorted to by the physicians of Smyrna. A patient affected with plague is never despaired of: immediately on being seized with the malady, all the windows and doors of the dwelling are opened to promote the access of fresh air, and the patient is covered as closely as possible to prevent cold. Everything which surrounds the patient is now kept most clean. He receives a most vigorous diet, and drinks nothing but lemonade: the ulcers and carbuncles are covered with poultices, and this simple treatment is persevered in most rigidly. It is said that, in this way, of 100 patients always from sixty to sixty-eight are saved. The same method is said to have produced similar results in Alexandria.

The most important places for the physician are the hospitals of Smyrna, which lie to the east of the Frank district, as well as the Quarantine stations in which the nature of the plague may be best studied. There are five hospitals here, some of which lie close to burial grounds, and cannot be healthy. The Turkish hospital has been improved of late, but is still susceptible of great change. The burial yard occupies an area of four hundred yards, and consists of dead chambers, in which the piled up dead are permitted to rest; the stench hereabout is always most loathsome, and it may be imagined what it must be during epidemics, when

hundreds of corpses are monthly deposited in that way. The best is the Frank hospital, where M. Ricord is the superintending physician.

In Smyrna no one looks after the cleansing of the streets, which is done in the Christian quarters by swine, in the Turkish by dogs. Easterly winds generally bring fevers: the southerly wind is oppressive during summer, and in the winter causes colds. Rain and southerly winds, if they last too long, are mostly the forerunners of the plague. The humbler classes feed on very unwholesome things—salt provisions, beans, &c. Children are much subjected to scrofula, women to hysterics, and diarrhœas are universal. Inflammatory fevers are most frequent in the hot season. Inflammation of the stomach and the intestines are also often to be met with. All diseases bring on here, as well as in Alexandria, a great degree of debility. The fevers are most common in June; those, however, of the autumn are more dangerous, at which time there appears a typhoid fever with yellow spots (typhus *icteroides*?) The most remarkable feature of this is, that it never appears amongst the inhabitants of the upper town, but is common with those of the lower part. Those diseases cease *mostly* as soon as the plague appears. Although there is nothing of any kind even approaching to medical policy, the Smyrna Journal always mentions the first cases of plague as a caution to the inhabitants. If the plague appear in the form of an epidemic, it happens always after rain. In October and November the first patients affected with plague make their appearance in different parts of the town, and if the epidemic is of a strong character, such cases continue during the whole winter; the number of affected increases until May, then it decreases, and the 15th August is mostly the turn, when the quarantine ceases altogether. It has been observed, that the more cases of plague there are in November, the fewer there are in March, April, and May.

If there be a case of plague, the patient is at once carried into the plague lazaretto, and the whole family also accompanies him to the quarantine. This arrangement is not the consequence of any sanitory regulations at Smyrna, but the voluntary agreement of some European consuls with their countrymen. On this account, such cases become at once known amongst Christians, whilst no one knows how the matter stands with Jews or Turks. The plague of 1837 broke out in the quarter of Hagio Dimitri; eight thousand Jews and Turks died whilst of Christians there were no more than one thousand. The periods which are considered the concluding period of the plague are remarkable: for Alexandria and Cairo it is the 24th of June; for Smyrna, which lies more north, and has a cooler climate, the 15th of August.

Dr. Flocken has given the following calculation of population and mortality:—Turks 41,000, Jews 4,000, deaths 8,000=17 per cent.; Greek Catholics 10,000, Europeans 2,000, deaths 91=0,8 per cent.; Armenians 3,000, deaths 190=6,3 per cent.; Greeks 40,000, deaths 761=1,9 per cent.

Interesting is this proportion of deaths, which shews a direct ratio to the well-being of the people affected; it is the smallest in the Catholics, the Greeks, the Armenians, and highest in the Jews and Turks. Still the question, arises why the Turks, who live in a mountainous quarter, and are therefore refreshed by currents of air and who are cleaner than many Christians, die more rapidly than the Christians, who inhabit a less healthy district. The answer is clear: the Christians keep quarantine, the Turks do not, and it is the interruption of the communication which preserves the Christians from the plague. The Turks leave their sick affected with the plague in the same houses with the healthy, and as they do not resort to any preventive measures, the illness always appears again. If this nest of contagion could be removed, the further spreading of the disease would be prevented, and its epidemic character changed. In the Greek churchyard, there were two hundred corpses of persons who died by the plague, buried in the year 1837; the Christians living in the neighbourhood shut up their doors and windows, fumigated their houses, and thus escaped infection. Although the plague made its appearance it was much less violent or general there, than in other places.

Still more interesting is what happened in the same year in the village of Budscha. It lies south-east from Smyrna, distant one mile, and on the other side of a hill where the plague already raged; the situation is very healthy; the inhabitants are all Christians. At the beginning of the plague in Smyrna from 12 to 14,000 Greeks and Europeans retired to this village, and as they perceived the great accumulation of people, they established a quarantine. No one who had gone to Smyrna was permitted to return without previous fumigation and change of clothes. During the whole epidemic but one case of plague occurred in the village; the person thus affected was immediately separated from the others.

In Smyrna, as well as in Alexandria, the plague is endemic, sporadic, and epidemic: In the former place is the best opportunity afforded to study the disease, for which purpose, however, the physicians must stop for some considerable time.

CONSTANTINOPLE.

When our ships anchor in the Bosphorus and we see all those palaces, minarets, and gardens, the question obtrudes itself how such places, surrounded by the finest nature, can ever become the seat of the plague? The Bosphorus, in fine, may be taken as a pattern of a salubrious locality, but what nature has done, men have undone by their negligence. Everywhere you meet burial grounds, filth, dead dogs, &c. As the town lies on a hill, the rain sweeps all these abominations on the lower parts of the city where they accumulate. We, therefore, find that the parts adjacent to the harbour are always the first affected by the plague, and that there the plague constantly rages worst. Hence the plague mostly extends in the quarter of the Jews and thence to the streets of the ancient Stambul.

Dr. Breyer states in his work on the plague in Constantinople, that according even to Turkish proverbs the plague begins from the 1st to the 20th of July, and remarks that at that period, the northerly winds, which have hitherto blown for several months, suddenly change into southerly winds, and that the plague is almost sure to cease if these latter continue for any length of time. If such changes of temperature and atmosphere were to be properly attended to and followed up by corresponding precautions, many causes of epidemics, if not altogether prevented, could be, at least, considerably lessened.

In 1838 it was proposed to have established at Constantinople a board of health, but the complication of social and political affairs prevented it. German physicians who had superintended the Quarantine, near Semlin, on the Danube, were called to Constantinople, and it was laid down as an axiom, that the plague was always imported to the latter city, on which account it was proposed to subject every one arriving to a strict investigation. As it was moreover believed that the plague came always from Egypt, it was ordered that everything coming from that country should be cleansed and thus to eradicate the disease. The board began to act in July 1838, but as the great prejudices of the Turks remained the same, they soon paralysed the exertion of the board. An order of Sultan Mahomed prescribed rigorously to subject any one coming from suspected places to a strict quarantine. But everything had been foreseen in this order, save the total deficiency of localities for quarantine hospitals, and the means by which they were to be ruled. It was moreover impossible to comprehend the whole of European Turkey, Asia Minor, and the Panhalik of Bagdad under such stringent regulations. What besides, could quarantine regulation avail in a country, which harbours the seeds of infection within its own bosom? As long as Turkey is what it is, it will always be harrassed by the plague.

FRENCH ACADEMY OF SCIENCE.

On the 24th of April, M. Delarive read a second paper on the subject of the Voltaic battery. This paper was devoted to an examination of the calorific phenomena which accompany the transmission of electric currents through liquids.

A like quantity of electricity, measured by its chemical action, being given it may be passed through bodies either under the form of a current impelled always in the same direction, or under the form of currents conducted alternately in contrary directions.

The author has already endeavoured to establish that the quantity of caloric developed in a wire conducting the current under one or other of these forms is the same. He has also shown that the resistance experienced by a continuous current, impelled always in the same direction, and passing from a metallic electrode into a liquid, or inversely, is much weakened when the same current is broken off and is impelled alternately in a contrary direction.

The present paper has for its specific object, to investigate the influences which are exercised over these co-ordinate thermometrical phenomena, by the surface and the nature of the electrodes, as well as the form under which these currents are transmitted. The following are the principal results, to which M. Delarive has arrived.

The quantity of caloric developed in equal quantities of liquid conductors, traversed successively by the same continuous current, are so much the more considerable as the surfaces of the electrodes are the smaller.

When two systems of liquid conductors are placed in the same circuit, it is found that for the same quantity of electricity transmitted, the sum of the quantities of caloric developed in the two systems is sensibly the same, whether the current be continuous in the two systems, or whether it be continuous in the one, and impelled alternately in the contrary direction to the other. Only, the elevation of temperature, which in the first instance is the same in the two systems, is, in the second case much weaker in the system traversed alternately in the contrary direction. The platina wire which transmits the current to the liquid is heated more in the second case than in the others. This point is important, because it is has a bearing on the question, whether the gas which is de-

veloped in the electrical decomposition of the water absorb. or not, a part of the heat disengaged by the electric current. But the preceding experiment seems to resolve this question in the negative.

It is known that when we transmit a continued electric current across a horizontal liquid column, the distribution of temperature which takes place in consequence of the current is not uniform. That part of the liquid, the nearest to the electrodes, is sometimes more, sometimes less, heated than the intermediate portion, but a phenomenon which is almost constant is that the liquid is heated more round the positive than the negative pole. All these differences disappear when the path of the current is alternately changed; the distribution of the temperature then becomes perfectly uniform.

M. Delarive conceives that it is his duty to limit himself to the exposition of these facts without making any systematic induction. But it may be already inferred, from the foregoing experiments, that the resistance presented to the current by the different parts of the circuit is the measure which always determines the degree of calorification which they experience.

The author terminated his paper by describing some curious phenomena which had occurred to him in the course of his researches.

The first was the formation of a black dust which invariably appeared when the operator passed, for some time, a strong current through the acidulated water. It appeared that this dust is nothing else but platina disaggregated or oxidised on the surface of the electrodes.

The second is that, which is shown by a jet of mercury, forced into the air under the form of a parabolic vein, when voltaic electricity is passed through it. It is only that part of the jet nearest to the orifice, which can transmit the current, and the part the farthest removed is that which is heated up to incandescence. In this state it presents a curious appearance, instead of showing the usual movement of projection, the vein seems to be composed of brilliant globules which turn on their own axis with great rapidity.

Finally, M. Delarive has demonstrated the production of a decided vibratory movement which accompanies the electric light formed between two charcoal points.

While M. Delarive pursues with so much zeal, researches which science requires to clear up the theory of the battery, other experimentalists have perseveringly followed in the same course. Among the most active is M. Abria, whose numerous papers will doubtless furnish valuable elements to the philosopher who will soon, we hope, ascertain the laws which govern this interesting subject. M. Abria has laid on the table of the Academy a paper relative to the induction of currents by currents, having specially for its object the study of the chemical, calorific, and physiological effects of currents of induction.

M. Matteucci has also addressed a new paper containing a great number of experiments on the torpedo, and devoted to show the similarity between the function of the electrical organs of the torpedo and muscular contraction.

In his political essay on new Spain, M. De Humboldt has detailed the then state of the mines of Mexico the produce in gold and in silver, the mean yield of the ores, the annual consumption of quicksilver, and lastly the quantity of precious metals exported from the conquest up to 1803.

The political changes which have taken place in Mexico having produced great modifications in the produce of the mines generally, it became important to take up the subject where it had been left by M. De Humboldt. M. Duport has done this in a paper of some length which he presented to the Academy a week since, and on which M. Becquerel has just read a report.

With so many facts before us, and the voluminous report of M. Becquerel, we must content ourselves, with the committee, in recommending to the notice of the public the work of M. Duport. They will find much useful and varied information on the resources of a country, which, until the present day, has been for the civilized world, only the workshop of precious metals.

The three methods in use, at this time, for reducing ores, in Mexico, have been particularly studied by the author, and submitted by him to a very enlightened analysis. As to the expense of production, the following is his estimate of the cost of 1000 lbs. of silver up to embarkation:—

	lbs.
Government dues, including mintage	145
Expense of refining, shipment, and transport	35
Quicksilver and reduction	454
Surplus after raising the ore and profit......	366
	1000

In discussing the eventualities of the future, the author has examined the contingency, in which the possible impoverishment of the mines would compel a modification of the treatment chiefly employed in Mexico. And he has demonstrated by positive experiments that the electrical treatment so happily introduced by modern science in all departments of human industry, will, from this time, resolve the question, and thus free the future from all inquietude in this respect.

A report was read by M. Regnault on an apparatus invented by M. Chuart, for denoting the presence of combustible gas in confined places, and thus to forewarn against accidents arising from the formation of explosive mixtures.

This apparatus is a kind of areometer, in which one portion displaces a sufficient volume of air, and descends below the point of contact. When the density of the surrounding atmosphere is diminished by the presence of the dangerous gas, the movement of the apparatus is indicated by a bell which announces the danger.

The committee while approving the idea of M. Chuart, and the arrangement by means of which it has been carried into effect has expressed a doubt whether the instrument on account of its delicacy and fragile construction could be employed with success in factories and coal-mines.

M. Mathissen has communicated the result of numerous optical experiments which he has made in employing glass which allows only green rays to pass, and rigorously absorbs all others. We shall return at leisure to this interesting work, but we wish to direct for a moment the attention of scientific bodies to a point in these enquiries, relative to a question which from the time of Newton has been the subject of prolonged controversy, and of which the solution remains yet in suspense amidst affirmations the most contradictory. We are speaking here of the perfect analysis of solar light. Since the time of Newton we have been enquiring what are the really simple elements which compose total radiation. Some, with the immortal author of this theory, think, that the seven principal colours of the spectrum correspond to seven elementary radiations; others, with Matthew Young, pretend to reduce these elements to three, considering the other colours of the spectrum to be produced from the mixture of elementary rays equally refrangible although differently coloured. Thus the orange zone of the spectrum will be, following these last, the place where yellow rays and red rays of equal refrangibility rest on. The experiments by which Newton defended his opinion and which consisted in passing one of these partial radiations, isolated by a first radiation through a second prism, could evidently not at all clear the question, and the argument taken from the mixture of colours which Newton considered on *pharmaceutical principles* is worth no more than his own demonstration.

Since this epoch Brewster has taken up the question and has proposed an experiment much more rational, which consists in looking at the spectrum through coloured glasses and examining if one of these supposed mixed rays did not become diminished in losing in the glass any one of the elements which it might contain. In the meantime the experiment of Brewster seems already to have had some success, but to be properly performed, glass is required which will transmit one colour only and which absolutely extinguishes all others. Up to this period one substance only is known which will satisfy this condition, namely, the red glass which M. Fresuel used for his experiments. M. Mathissen having found a green glass which seemed to possess the same property, hastened to repeat the experiment of Brewster, and has announced an important result; the green zone in this attempt being prolonged up to the red part of the spectrum. In announcing this fact, M. Arago has insisted on the utility which would arise from taking up again these experiments and introducing into them the delicate contrivances of which modern science is in possession.

Messrs. Danger and Flandin submitted a sealed packet, in which was contained researches on the pre-existence of certain metals in the blood and viscera of man in a normal state, and on poisoning by means of copper and of lead. By reason of the importance of the result, these gentlemen believe they may now announce to the Academy that contrary to the views of several toxicologists, Orfila for example, there exists neither copper nor lead in the blood and the viscera of man in the normal state. The sealed packet of Messrs. Flandin and Danger enclosed also the description of an analysis, which leads to the discovery of copper and lead in organic substances, even when these metals are found mixed in the proportion of a hundred thousandth part. With this process 32 *grammes* of such viscera taken from an animal poisoned by a compound of copper and lead, will suffice for the expert chemist to furnish a demonstration in case of poisoning.

M. de Lignerolles has given the description of the process which he employs for anatomical injections. Two formulas are given out of twelve, which are described:—

White gum lac - - -	130	grammes.
German Vermillion - -	20	,,
Alcohol at 36 deg. - -	400	,,
Dextrine - - - - -	32	,,
Alcohol - - - - -	100	,,
Bran - - - - - -	50	,,
Lamp Black - - - -	9	,,

The author has succeeded in demonstrating the organisation of articular cartilage, and has shown to Messrs. Dumeril, Serres and Breschet, vessels injected up to the articular surfaces.

This anatomical fact is the much more worthy of attention, as the most eminent men do not admit the organisation of cartilaginous tissue.

Anatomical, Pathological, and Therapeutical Enquiries on Consumption, by M. Louis, Hos-

pital Physician.—In order to elevate medicine into the rank of the sciences, it is not labours, but facts that are wanted. In every epoch men are found, who, comprehending the emptiness of ancient systems, endeavour to replace them by more novel and truer theories; but the foundation to works which their intelligence has raised, is always wanting. Forgetting that genius may discover truth, but may not present it in its entireness, they address themselves to their imagination rather than to facts, and their systems are no truer than those of their predecessors, for these systems have been created beyond the limits of observation; imagined, not deduced. Nevertheless, during some years, medicine has entered a new path. We are less anxious to day for theories; what is required is exact facts, presented under all their forms, and collected in great numbers. It was time, in fact, to verify the worth of so many different opinions, circulated by our greatest masters, to substitute precise results in the place of vague assertions, and to furnish a solid foundation, on which to erect the medical edifice. Among the men who, in our times, have thus viewed science, and have applied themselves to the work with the greatest ardour, we must place in the first rank, the author of researches on consumption. Notwithstanding that the works of Bayle and Laennec recognised that in the course of this affection, as in that of all chronic maladies, the most part of the functions are perverted, and the organs more or less altered, and that under his double point of view, our knowledge is very imperfect—he proposes to review all that has been done on consumption, and to give its history complete. Collecting, during several years, all the facts, which presented themselves in attending forty-eight beds with the same care as for a malady little known:—examining all the functions, as well as the organ especially affected; following day by day their least modifications; consecrating entire hours to pathological examination; he published in 1825 the numerous facts which he had observed. Eighteen years have elapsed since this epoch, and he has never lost sight of the task he had proposed to himself. He has now reproduced his work with all the modifications that the observation of new facts, and a long experience have suggested.

In the first part of his work the author lays open the pathological alterations which can alone give a complete explanation of the symptomology, and enable his readers to comprehend the weakness of the therapeutical treatment employed in this affection. Profiting by the researches of Bayle and of Laennec, those more recent of Messrs. Andral, Cruveilhier, and Natalis Guyot on the nature of the tubercle, and the place which it occupies in the pulmonary tissue; he completes them by a description of the alterations which the bronchial trunk presents throughout its whole extent. In the history of phthisis, the attention of observers had been confined to the ulcerations of the larynx. It was with difficulty they indicated those of the tracheal artery, and they passed over in silence those of the epiglottis. Nevertheless, these lesions are very frequent. In the trachea they are uniformly distributed over the whole circumference. When they are small, they easily escape observation; when larger, they are unequally distributed, the largest corresponding to the fleshy portion. This membrane is, in some cases, two or three times thicker than in its natural state, and more or less ulcerated. In certain subjects we sometimes meet with cartilaginous rings entirely denuded, thin, and in part destroyed: these great alterations almost constantly affect the posterior part of the trachea. On the other hand, the ulcerations which the epiglottis presents are usually on the tracheal surface.

But the most important fact that M. Louis has elicited from the number he has collected, is, that after the age of 15 years, there are no tubercles in any organ, unless they have previously existed in the lungs; he himself had never met with an exception to this law: but with that truthfulness which constitutes the first merit of a scientific work, he relates three cases in opposition to this rule. Notwithstanding these exceptions, it is easy to be seen what consequences can be drawn from this fact, as much for the diagnosis of maladies as for certain applications of surgery. After this examination of the respiratory organs, the author describes with the same details, the state of the genital organs, that of the central nerves of the vascular system, and, above all, that of the heart. The numerous modifications so little studied of the digestive organs the relative frequency of ulcerations of the gastric and intestinal mucous membrane in phthisis and other chronic maladies, and, following the same course, he clears off errors which had been received in science as so many axioms.—Thus it was held that phthisis was the cause of the hypertrophy of the heart, and of fistula of the anus: now in the immense majority of cases, the heart presents a less volume than in the normal state, while, in more than a thousand cases of phthisis, scarcely any fistulas have been recognised. In this part of the work there are no symptoms but what have been described with the greatest minuteness, and of which the absolute and relative worth has not been fully appreciated—each page presents facts accompanied by proofs; but the study of causes, that obscure portion in the history of every malady, makes more evident how much we may yet expect from observations like those of M. Louis.

There is scarcely one of the infallible causes admitted by all authors, which has been completely established. This certain knowledge of uncertainty, is a step in advance. There remains the treatment of phthisis—we know how powerless is therapeutic treatment against this affection—but it is necessary, at least, to examine all the medical agents so much vaunted in later times, from chlorine, ammonia, salt, and so many others, offered by their inventors as specifics. The author has conscientiously fulfilled this part of his task, and after having employed all these means, he affirms that they are powerless, and that we can only oppose to phthisis a palliative treatment, and that every case of cure is to be attributed to nature, and not to art. We could only give a short sketch of a work so full of facts—but we hesitate not to say, that it is the best work on phthisis.

M. Louis conceals not what is yet incomplete in the history of this affection. He is satisfied to call upon the profession in every country, to collect new facts at the risk of invalidating his own observations, and we conclude by applauding this wise and honest mode of treating science.

Naphtha.—Dr. Hastings, of the Blenheim street Free Dispensary recommends the internal administration of naphtha and its inhalation in cases of consumption. The naphtha that is used must be procured from wood, that obtained from coal-tar being very irritating to the lungs, heart, and stomach, and sometimes causing severe headache. He was induced to try it from finding on experiment that it possessed a peculiar power over tubercle out of the body, reducing it to an amorphous powder. He does not offer any theory or explanation of the manner in which it produces its beneficial effects, as he intends to bring the subject before the profession in another form. Several cases are narrated by him in which apparent advantage was derived from its use. In the first case reported the sputa was examined with the microscope, and besides containing a considerable quantity of globules of tubercle, a cryptogamic plant was found, similar to that first noticed by Dr. J. H. Bennett, of Edinburgh. Dr. Hastings has met with the same plant in every secretion of the lungs examined with the microscope, when those organs have been affected with softened tubercle.

Organization of Lymph.—According to Henle, the following changes may take place in an effusion of lymph consequent on inflammation or other causes. 1st, There appear cells, which develope themselves in the same way as those of the tissue surrounding the effusion; this is the process of regeneration and hypertrophy. 2dly, The cells do not develope themselves in the manner of those of the tissue into which the effusion took place, but in that corresponding to the manner of development in cells of some other tissue in the body, as in ossification, induration, &c. 3dly, the cells develope themselves in a manner altogether strange to the body; and here their development, independent of the latter, is particularly evident, since the structures formed by these cells tend to dispossess the annexing tissues; hence they are often called parasites. These cells, if deposited in another part of the body, develope themselves always in this peculiar manner. Even if removed to other bodies, they develope themselves to constitute the same structures, and a single cell of these bodies is sufficient to cause the development of an infinite number, if brought into a substance favorable to their propagation.

Hydrencephalus in the Fœtus.—Hydrencephalus of the fœtus is not a common cause of protracted labour, but it materially impedes the diagnosis, as it is not easily recognised, and if not discovered early, the result is generally unfortunate. Dr. Lee says every case of the kind that he has seen has terminated fatally. The patient dies from exhaustion, inflammation, or rupture of the uterus. Where the cause of the difficulty is clearly ascertained, by feeling the bones of the fœtal head widely separated from one another, and a sensation of fluctuation is also perceived, where the os uteri is dilatable, the pains have continued strong for some hours, and the head has not entered the brim, the perforator should be employed without loss of time. Dr. R. Lee narrates cases terminating fatally from exhaustion, uterine inflammation, or rupture induced by hydrencephalus of the fœtus, selected from his own practice, and from the works of Smellie, Ramsbotham, and Perfect. The two most unfortunate cases of difficult labour that have occurred to him, took place within a week of each other. They were both instances of extensive rupture of the uterus.

New Method of Preparing Fuel.—The materials used by Dr. Albert in the preparation of the fuel, are bituminous schist, which is a slate or dark colored stone, partaking of the nature of both coal and charcoal; aluminous clay,—a refuse, or the bottoms of the acetate of alumine, in red-liquor works; ground coal,—a refuse from coal-pits, which should be quite free from sulphur; vegetable gelatine or tar,—a refuse from pyroligneous acid works, or wood distilleries; mineral gelatine or tar,—a refuse from coal-tar distillation; and mineral oil,—a refuse from naphtha distillation.

TO CORRESPONDENTS.

The Westminster Hospital.—*We have received a number of letters on this Institution marked with a great diversity of sentiment. The only one that contains the writer's name is published. Our single observation is, that the course that can alone save the school, is the one which making it worthy of medical science and the metropolis of the British Empire, guarantees it a triumphant course. No middle course will do. Lecturers without fame and without the qualities that can merit it, obviously will not do in a day when so many institutions are offering as teachers, the best celebrities of the day, and when all know the advantage of studying sciences under men whose achievements make them authorities, and cast a reflected light on their pupils. Dr. Hunter, Mr. Phillips, and above all " the greatest medical reformer of the age" should see to this. The career of improvement having commenced, let them not allow it to stop till that happy consummation which the friends of hospital reform and medical education so anxiously desiderate.*

If the young lady who wrote the letter signed "A Pupil *of Westminster Hospital," be at leisure, and visible during daylight, and will call on that excellent calligraphist, our worthy subeditor, " she will hear of something to her advantage."*

Mr. R. Co., Durham.—*We have not the honour of knowing any foreign institution where doctor's diplomas can be purchased by an order from this country. A gentleman, we see, advertises his assistance in this way occasionally in our Journal: he may be able to give fuller information. If this be not satisfactory our correspondent should apply to Messrs. Morison, and Moate, of the* British College of Health, *or to Dr. Webster who has " seriously" announced his intention of converting what remains of the British Association into an equally respectable diploma manufactory.*

L. F. C. L.—*About one part of the tincture to three.*

Mr. Spence.—(1.) *Received*; (2.) *Under eight lines five shillings, sixpence a line afterwards*; (3.) *fifteen per cent. reduction.*

X. Y. Z., M. N., Fidus, *and several other correspondents under consideration.*

Mr. Robert Cox sends us the following note:—" There appeared in your last number, p. 95, an extract, subscribed by me, from ' Minute of a Meeting of Committee, of medical and other gentlemen,' held here on the 1st inst., and at which Mr. E. T. Craig extracted a tooth from a young man named William Gill, whom he had just thrown into the mesmeric sleep. Allow me to explain to you that the extract was furnished to Mr. Craig, at his request, early in the forenoon of the 2d, with no view on my part to its publication; and that had I been aware of his intention to forward it to you, the following additional facts should have been stated. First, the patient is one of the persons who accompany Mr. Craig on his mesmeric tour; and, secondly, the object of the meeting was simply to witness and record apparent phenomena, and not to give any opinion about mesmerism. The ' conditions of the meeting' also ought to have been published; but with these it is hardly necessary to trouble you now. With respect to Mr. Craig, whose mesmeric exhibitions here I have frequently witnessed, both in public and in private, during the last fortnight, I may say, for myself, individually, that I have not been able to perceive any signs of insincerity in his proceedings."

A. B. sends the following note:—May I, through the medium of your valuable pages, ask Mr. Wakley where I can find published the system of arithmetic by which he calculates that sixty patients at one of the London Hospitals having been seen within the space of fifteen minutes—the ratio is three in a minute. He finishes the paragraph with a note of exclamation. Does he intend our surprize to be expressed at the ' railroad method' of seeing and prescribing for patients or his remarkable method of developing proportion. The latter is certainly quite novel, whereas the former is very old.

THE MEDICAL TIMES.

Saturday, May 13, 1843.

" Stultorum incurata malus pudor ulcera celat"
Horace.

The great aggregate meeting of the British Medical Association—an event which at this crisis in the history of our profession, has been looked forward to with no ordinary amount of anxiety and expectation—came off on Tuesday last, in that scene of metropolitan popular demonstrations, Exeter Hall. Knowing the lively interest now felt in the vital question to be discussed, remembering that the Association had nobly expended a large portion of the year's receipts in publicly inviting the attendance of the whole body of our brethren (six or seven thousand of whom reside in London alone) we carefully guarded ourselves from that exclusion which, large as was the Hall, we felt to be but too probable, by a very early attendance. Imagine, therefore, good reader our sense of ill-treatment when in hurrying to the grand scene big with the fate of our profession, an officious beadle arrested our impatient steps, and learning our quest, politely ushered us into chamber No. 8, as the future field of operations—a decent apartment, some 30 feet by 25, lighted by two mould candles, and three unneeded table lamps, whose o'er brilliant radiance revealed to our wondering eyes half a dozen school benches, occupied by four meek and patient looking gentlemen. Were we in the Committee-room? Scarcely, for those we saw, were like ourselves spectators. While asking ourselves questions like this, and casting about for some sensible way out of this sphere of enchantment, now questioning whether our guide mis-understood our enquiry, now thinking whether this might be, as in other exciting demonstrations, a tail piece, a supplementary meeting to the real one, the door opened, and the Committee itself (viz. Mr. Harrison, and Mr. Bottomley, Dr. Hall, and Dr. Brady, with eight or nine gentlemen, who being less distinguished are less known to us) advanced, in solemn state and formal procession, to open the proceedings for the benefit of the whole assembly, and give it, (viz. to us six) the wisdom and emotions which acquired during six months exertions for the common weal, were pent up in their capacious bosoms till this moment of triumph to them and blessing to us! We were indeed a flattered audience! as honoured, and almost as happy an half dozen, as the world has seen, since the half dozen Newgate convicts, whose edifying *executions* as one of them remarked, was under the especial patronage of some of " the queerest swell coves as was."

Time, however, which changes all other things in its rolling course, made improvement here. For one moment, one happy moment, we succeeded—counting Dr. G. Webster as one, and Mr. Bottomley as two—in absolutely numbering fifty-two persons present. But, alas! in the fullest time of the evening's prosperity in numbers, as in its lowest ebb, there was no Professor Grant: canny and prescient, he is the Association's Duke of Argyle. His flight omened non-stability to the edifice. We asked for Orator Lynch—the eloquence of the evening revealed him not. We sought for Mr. Farre—he was *far* away: for Mr. Grainger, he might as well have been Mr. Stranger. The absent took us to the present: we scrutinized with phrenological exactness the character of their heads; passed, by a natural transition, to the *empty* benches—and in the heightened feelings of the moment's disappointment and sadness, found ourselves involuntarily whispering, in a breath which, though bated, the room's dimensions made but too generally audible, " Alas! poor Association! The hand of Death and of Webster is upon thee! Much it fears us, that all the physic of thy Bradys, thy Halls, and thy Bottomleys, will be powerless to save thee!" In mourning curiosity, in sorrowing patience, we submitted our understanding, with all the predilections it might have in favour of grammar or taste, to the smitings of those in whose hands our self-devotion, for our readers's interests, had consigned us. The first gentleman we suffered under, was the toiling President. He had no member to propose: his *tongue* saw in the circumstance a proof of apathy; his *countenance*, a proof of the march of intellect. The subscriptions were in arrears—his words saw nothing in that but the want of a cheque on a banker: his feelings saw in it the handwriting on the wall. Honour remained to the French monarch, when all else was gone. The Association had lost members and friends—but Webster remained. The Presidentship had always been his. 'Twas then the sole, saving feature of the Society. Others are now rapidly adding, for the Vice Presidentships are his, the Committeeship is his, and (finish of perfection) the membership—the total office of membership—is now nearly (how very nearly!) his! When the Association exists in Webster, and Webster is the Association, what may we not expect? What unity of design? What harmony of action? What an absence of squabbles as to who thought first on Medical Reform—and as to how much this man's resolutions, (Bless the mark!) or that gentleman's orations, discovered principles which are at the base of all men's reasonings and feelings! It is on this uniting, centralizing principle—this combination of the autocratic with the popular—that we may understand why, according to the worthy President, the last half-year—despite apathy, disunity, loss of members, increase of debts—has been the most effec-

tive of periods in the Association's annals. In it it was, that the waters of the well which, six years since, slept in that "silent marsh," the President's brain—which, four years since, was a purling brook, only seen in sunshine—became a mighty river, which, about to sweep before it all obstructions, was already on the very brink of that great ocean, the object of all its peregrinations—Medical Reform!

Dr. Webster's announcement of *his* exertions and achievements—of his griefs, and joys, and hopes—were followed by speeches of Messrs. James and Self, recommending the gratuitous reception of students as associates. Dr. M. Hall followed, in dismal aspect and lugubrious accents, bewailing the want of support, and supplicating the invention (unnecessary prayer!) of a galvanic battery working under his auspices on the nerves of his respectable brethren. Dr. Brady, who, sitting at the left hand of the President, interposed the bulky guard of his person between him and Dr. Hall, declared that the latter was a galvanic battery himself,—and Dr. Granville, after a reclamation of the credit which had been assumed by Drs. Hall and Webster, as Medical Reformers, as belonging more to him, and a severe invective against the Association, declared that its mismanagement was a main source of the disunity and apathy complained of in the profession. To this Dr. Webster offered a reply, in which he disputed priority as a writer on Medical Reform, but made no defence of the Association. Things now went on very decently, till a burly-looking gentleman caught the notice of the Chairman, and exclaimed :—

There's a gentleman you all know, the greatest reformer of the age. He's Mr. Guthrie. I've always heard him say "take the bull by the horns!" (Tumult.)

Dr. G. Webster, (interrupting) perhaps the gentleman will make known the subject of his observation.

Gentleman.—Mr. Guthrie, as I said, advised to take the bull by the horns.

Dr. W. (again interposing.)—If the gentleman would allow me, the subject of the resolution is the poor law, but if the meeting would wish to hear the gentleman—(the general wish being to hear the speaker and having informed his auditory that his name was Rugg—"the thing you clean your feet on"—resumed as follows):—

Now I say, as the first reformer of the age said, take the bull by the horns! (Laughter.) You see you are getting thin—you want money, try then and form yourselves in one faculty, and give a little bit of paper (shewing the palm of his hand) for their money, summut they can shew in their windows for their money. I say take the bull by the horns. (Laughter.) Now, as it were, if one of the members got one of these things, and had it in his window his neighbours would see it; and Mrs. So-and-So, speaking to Mrs. So-and-So, would say where do you get your physic. The other'd, say from Dr. Such-a-One, who has got the nice little bit of paper in the window. (Cheers.) Every member would be a doctor for his money. What I mean is, a small bit of paper with a picture upon it, (laughter) one like the Pharmaceutical Society. (Cheers.) You might have the greatest reformer of the age at the top, and some of you little ones, as Dr. Webster, or Dr. Hall, at the bottom, and that's what I call taking the bull by the horns.

The most ludicrous part followed, for Dr. Webster here interfering, said that the Association had long had such a scheme seriously in contemplation, and when all their means for carrying it out were properly organised, they would formally make it known. Meantime, as Mr. Rugg could not properly bring forward his motion, except as a member of the Association, they would be happy to receive his name, enroll him in their body, and pay due attention to his suggestions. Hereupon, Mr. Rugg's face became ornamented with a very sagacious smile and declining in expressive silence the very great honour so unexpectedly offered him, he observed slyly to a friend that "he rather thought he had a better speculation for his money."

The Meeting now broke up, and we went home, ruminating on the truth of the old politician's words,—"Ah! my son, thou knowest not with how little wisdom the world is governed!"

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE V.

In examining organic bodies, we have found it necessary to consider them under two points of view, first in reference to what we have termed their *ultimate elements*, and secondly with respect to their *proximate principles*. I endeavoured to define the meaning of the term *proximate principles* at the end of the last lecture, and mentioned the singular analogy that pervades them in reference to their ultimate component parts.

It will be our business to-day to commence an inquiry into the distinctive characters of these proximate principles, and to endeavour to show how they are separated, how they are identified, and what are their leading characters and uses.

There are two classes of what may be called nitrogeniferous, or *azotized* proximate principles, and these are highly important as articles of food. One belongs to the vegetable, and the other to the animal kingdom; but we shall find, when we come to examine them with the acids of modern chemistry, and to refer to their ultimate constitution, that whatever may be their source they present a very remarkable identity of composition, that though we derive some of them exclusively from animals and others from vegetables, they are, in all essential points, not only similar but absolutely identical.

This indeed is a fact that had long been suspected, though only lately experimentally and unequivocally established by the laborious and ingenious researches of Dumas and Liebig.

These nutritive azotised principles appear to exist in all plants; in some, combined with other esculent substances, and in others, with disagreeable or pernicious products; and it is a curious fact that nitrogen constitutes, as it would seem an essential ultimate element, of those highly active and poisonous bodies which are grouped together under the term of *alkaloids*, and which are familiar to us under the names of quinia, morphia, atropia, strichnia, and so on. But these we are not now to examine.

Then there is another set of organic compounds in which nitrogen is present, and these are the principal varieties of *coal*, and we shall find that this subject presents some curious features in reference to a comparative examination of the present condition of the vegetable world, and that which appears to have existed at the time the coals were produced.

I have endeavoured to show you in a former lecture, that the nitrogen contained in plants is not derived immediately from the atmosphere. There are, perhaps, a few plants which at certain periods of their growth may have the power of abstracting nitrogen directly from the air; but these seem to form the exception, and not the rule, and we have good evidence that the chief, if not the exclusive, source of the nitrogen or azote of vegetables is to be soughtf or in the ammonia present in the air and in the soil; hence it was that I dwelt so much on the composition of ammonia, and shewed you the various states in which it may exist, so as to be available for vegetable nutrition.

We have much satisfactory evidence in illustration of the immense absorption of nutriment by plants from the air; the experiments of Boussingault are particularly important in reference to this part of our subject. One set of them, for instance, have reference to the growth of the common pea, and show what happens when they are made to vegetate in what may be called a perfectly barren soil, composed of calcined clay and water; and it is a very curious and remarkable fact, that, under these circumstances they not only grew, but they produced both flower and seed.

The table shews the ultimate constituents of the peas when sown, and of the entire plant after three months grown; and I have added a third column, shewing the increase in the several ultimate constituents at the end of that period.

	Seed Peas.	3 Months' Plants.	Incr.
Carbon	515	2376	1861
Hydrogen	59	281	222
Oxygen	440	1651	1210
Nitrogen	46	101	55
	1060	4408	3348
Ashes	12	33	21
	1072	4441	3369

With regard to the general facts established by this table, we shall come to them afterwards; I wish now to show that the peas growing under these circumstances must have derived their chief increase from the air, and I shall afterwards prove to you that the increase in nitrogen must be ascribed to the existence of ammonia in the air, and that they were in a soil very favourable to the absorption of that compound.

Now, with regard to the first class of nitrogeniferous, or azotized bodies, namely to those which are *alimentary*: let us go back to wheat flour, which I have already adverted to. If we tie up some flour in a piece of coarse linen, and knead it carefully under water, we find that a quantity of white powder gradually subsides from the water, which is *starch*. The water also holds certain other substances in solution, such as sugar and gum, and a third substance, which coagulates by heat, and lastly, there remains in the cloth or bag, an insoluble viscid substance, which we have already adverted to under the name of *gluten*. It is a substance of singular properties, extremely elastic, insoluble in water, and when dry assumes very much the appearance of horn. I shall have to show, that it does, in fact, consist of principles analogous to, nay, I may say, identical with those which we find in muscular fibre, in the egg, in blood, and in other animal matters.

Now, the relative proportion of this gluten to the other ingredients of the flour, is a matter of great importance as regards the nutritious power of the grain, and we find it liable to vary considerably. The nutritive power of wheat, for instance, will depend partly on the soil, partly on the manure, and partly on the state of the atmosphere in which it is growing. We find in some wheat, that there is not more than 2 or 3 per cent. of this substance, and in others, as much as 28 or 30 per cent. The fitness of the plants for animal sustenance is directly as to the quantity of gluten they contain. If also confers a considerable degree of plasticity upon the paste made from flour in which it abounds, especially fitting it for the manufacture of vermicelli and macaroni.

Of course, if what I have stated as to the chemical constitution and importance of this and other azotised principles, and the variable proportions in which it is found in wheat, be correct, it will be an object with the agriculturist to accumulate nitrogen, or to accumulate those principles or products which abound in nitrogen. It is the object of the arboriculturists to accumulate carbon, to promote the great and rapid growth of timber;

but the agriculturist looks to another element. Now, the viscid elastic substance I have here, and which I have called *gluten*, is not, in fact, a simple proximate principle, but it contains others. But it is a very curious part of the history of this substance, that those principles which it contains, though they differ from it in some chemical characters, appear to be identical with it in composition. I shall come by-and-by to other kinds of gluten, and matters associated with it, under the names of albumen, fibrin, caseum, legumine, a variety of terms having been applied to this principle, and its modifications; but if you will look at the table below, you will see that they are properly associated under one head, as respects their ultimate chemical composition.

Different authorities differ a little in the relative proportions of carbon, hydrogen, nitrogen, and oxygen, which it is presumed they contain. And it may, perhaps, especially in relation to certain physiological facts, be a matter of great importance to ascertain whether they are absolutely identical or not. In some cases, their distinctive characters appear to depend upon variable adventitious substances, such as sulphur, phosphorus, &c.; but, putting those for the present out of the question, it may be assumed that they all contain one basic proximate principle, to which Mulder has given the name of *protein*, and of which the ultimate composition is here stated:—

Carbon	48 ..	288 ..	54.9
Hydrogen	36 ..	36 ..	6.8
Nitrogen..........	6 ..	84 ..	15.9
Oxygen	15 ..	120 ..	22.4
Protein	1 ..	528 ..	100.0

What we call the equivalent, therefore, of protein, is 528.

Hence, then,—

$$\left.\begin{matrix}\text{Albumine,}\\ \text{Fibrin,}\\ \text{Casein,}\\ \text{Glutine, \&c.}\end{matrix}\right\}=C_{48}\ H_{36}\ N_6\ O_{15}.$$

To perform the proximate analysis of wheat flour, we may begin by carefully separating the gluten in the way I have described, and having properly dried it, digest it in alcohol, by which we get a solution of certain substances, one of which we may call the *casein* of the grain, and which is deposited in flakes during the cooling of the alcoholic solution. There remains a matter dissolved in the alcohol, and which may be obtained by careful evaporation, to which the term *glutine* has been especially applied. Lastly, there is the substance insoluble both in hot and in cold alcohol, which is vegetable *fibrin*. You will also observe that along with the casein there separates more or less of a fatty matter.

Here, then by the cautious washing of wheat flour, we first obtained starch and gluten, and this gluten we have resolved by the action of alcohol into casein, glutine, and fibrine: now, let us look at the contents of the water from which the starch granules have subsided, and we shall find, having previously filtered it, that on heating it up to its boiling point, it becomes turbid, and deposits flakes of *albumen*, and having separated these by filtration, there remains a mixture of *gum* and *sugar;* the latter may be removed by alcohol, and the gum remains.

Now, then, I have so far completed the analysis of wheat flour, (and it may be taken as the type of the cereal grapes) and we have found in it the following proximate elements:—

1. Starch.
2. Fibrine.
3. Casein.
4. Glutine.
5. Fat.
6. Albumen.
7. Gum.
8. Sugar.

Now, with regard to certain other vegetable substances, in which I have stated we find principles similar to or identical with these, I will just for the present show you one or two cases of this kind:—The turnip, for example, is principally water and woody fibre, but it contains a certain quantity of starch, gum, sugar, and it contains albumen, —it contains a *nitrogenized* principle. The liquor, when squeezed out of the turnip, is clear; but in order to shew the presence of albumen, or a principle analogous to it, you have only to heat it a little over a lamp, and it very soon becomes turbid; in fact, it undergoes a change exactly similar to that which the filtered washings of wheat flour underwent, or which is presented by heating a mixture of the serum of blood or of white of egg and water. It deposits a quantity of coagulable matter, identical with one of the azotized principles which I get out of wheat. The juice of all vegetables exhibits more or less of this turbidness, when heated—of this precipitation of albuminous matter; and although we may be able to find a small quantity, indeed, of the azotized principle in the solid matter of the vegetable, we invariably find it in the sap, some containing little, others a large quantity. Before we go further, it may be well to refer to the corresponding azotized products which occur in animal matter. For instance, if I take the blood before it coagulates, and stir it about for some time, I get a certain quantity of a fibrous matter adhering to the rod, and out of which the red colouring matter may be washed with water; it then remains colourless, and is animal *fibrine*. Then, again, with regard to the white of egg—you know it in its fluid state, and how it coagulates on being boiled. This is the same substance that we get out of the juice of the turnip, before alluded to, and out of the water in which wheat flour has been kneaded, and corresponds to *albumen*. Then, again, in regard to milk —if we add a little acid to the milk, or if we add a small portion of the internal membrane of the stomach of an animal, it coagulates, because there is in it a certain quantity of a substance called *caseum*, the properties of which are the same as those of the casein of wheat. Now, although there are certain bodies associated with the white of egg, with the fibrin of the blood, and with the curd of milk, such as sulphur and phosphorus, and certain salts, the organic principle which these and their counterparts in vegetables contain, is one and the same; they are so many isomeric modifications of protein.

I must now dwell a little upon the further character of these substances, and upon the tests by which they may be recognised.

In the first place, when in the liquid state, they may frequently be recognized by becoming turbid, or by coagulating by heat, of which the white of an egg is a notorious and common instance. Then again, there are a number of other properties by which we recognize them.

They are all of them, for instance, soluble in alkalis, and if we thus dissolve albumen, or fibrine, or casein, no matter from what source, and filter, we obtain a clear alkaline solution, which, on being carefully neutralised by acetic, or other proper acid, becomes turbid, and gradually deposits white precipitate: now, this precipitate, when carefully obtained and washed, is always identical in proportion and ultimate composition, and is in fact *protein.*

Another character of this azotised principle which we thus find common to the vegetable and animal kingdom, is that when carefully digested in warm muriatic acid, it furnishes a dingy lilac-coloured solution. Again, we find that all solutions of protein yield a precipitate with corrosive sublimate, and that although not coagulated by acetic acid alone, nor by prussiate of potash alone, they are precipitated by a mixture of the two: the best way of proceeding with this test, is to add a drop or two of acetic acid in the first instance, and then a drop or two of a solution of prussiate of potash, and if protein be present, a white cloud or precipitate ensues.

Kreasote also forms a precipitate in the greater number of albuminous solutions, but it is an indefinite test.

Another remarkable property of some of the solutions of protein, and the best for the purpose is the serum of the blood, is exhibited in its action on the sulphate of copper. If I add a solution of sulphate of copper to the serum of the blood (which contains about 8 per cent. of albumen), I obtain a blue, or sometimes a grass green, precipitate, which I will call an albuminate of copper, and which, on the addition of a solution of caustic potash is entirely redissolved, and yields a transparent liquid of a magnificent violet blue colour, and very intense.

[Mr. Brande exhibited all those properties of the different modifications of vegetable and animal protein, and pointed out the cause of some apparent differences between them, arising either out of the different quantities of organic matter in solution, or out of the accidental or inorganic matters at the same time present. He also shewed that many albuminous fluids might be coagulated by electricity, and mentioned the peculiar appearances observed in those cases at the respective poles of the Voltaic pile.]

I would especially call your attention to the solubility conferred upon certain otherwise insoluble metallic oxides by their combination with organic compounds, and more especially as in the present case, by protein; the oxide of copper for instance, which alone is quite insoluble in solution of potash, becomes readily soluble when serum or albumen are present. It is perhaps in this way that certain metallic compounds may get into the blood, and may escape detection by ordinary tests.

There is another azotized principle which performs a very important part in the organic creation, to which the term *gelatine* has been applied. It is well known to you as isinglass. There is in the market another substance, which is glue purified, and which answers in a chemical point of view perfectly, and is very like isinglass. It is prepared from the skins of animals, or rather from the odds and ends of the tan-yard, which are boiled down, as in the manufacture of glue; and the impure gelatine so obtained is purified by sulphurous acid, which at once bleaches and destroys its flavour and odour. It is then reduced to a strong jelly, which is cut into slices and dried upon nets, much in the same way as glue. Some of it is coloured pink, and it is now pretty universally used as a substitute for the more expensive article isinglass, in making what is called calf's-foot jelly, and other dishes for the table.

Gelatine is a well marked and distinct proximate principle of animals, and has no vegetable counterpart. It is characterised by its solubility in water, and by the gelatinous or tremulous form into which it passes when its hot and strong solution cools. It affords an insoluble precipitate with vegetable astringents, with all those vegetables, namely, which contain tannin, and this precipitate is quite distinct from that which is thrown down in the same way by certain forms of albumen. It is in short *leather*, and the precipitate I have here is exactly the substance obtained by soaking the skin of an animal in a weak vegetable liquid tan, the peculiarities of leather arising out of the organised texture of the skin, skin being an organised gelatine.

The insolubility and impermeability of this compound of tan and gelatine is well illustrated in the ordinary operation of tanning, where if the skin is at all thick, it is first soaked in very weak tanning liquors, which are very gradually strengthened until the leather is perfect; for if the skin were at once subjected to the action of a strong tanning solution, the exterior surfaces only would get tanned, and would protect the interior from further penetration, and in badly tanned hides this is the case; they are recognised by a white central line, seen on cutting through the skin; whereas the section of a well tanned hide exhibits an uniform texture and brown colour throughout.

In respect to its ultimate constituents, gelatine differs from the protein family in containing an excess of nitrogen, so that if you abstract carbon and add nitrogen, you may convert albumen and fibrin into gelatine; in fact, it would appear that something of this kind does happen in the bodies of animals, for carbonic acid and water pass off from the whole surface of the body, in consequence probably of the change of the albumen or fibrin of the blood into gelatine or skin.

There are a number of organic tissues which appear to consist of albumen and gelatine, or rather of proteine and gelatine, either mixed or combined, and there are some which, under the influence of boiling water, are modified apparently in consequence of the formation or separation of

ammonia. When bone is steeped in dilute muriatic acid, its earthy or hardening principles are dissolved out of it, and an elastic cartilaginous substance remains, which has been called *chondrin.* The true cartilages of the body are similarly constructed; by long boiling, it yields a substance having many of the properties of gelatine, but differing from it in its action upon certain re-agents; chondrin, for instance, occasions precipitates in solutions of alum, of sulphate of iron, and of acetate of lead, which is not the case with gelatine.

Much stress has been laid by chemical analysts and physiologists upon the comparative ultimate constitution of protein, gelatine, chondrin, membrane, hair, horn, and other proximate animal products, and formulæ have been given with a view of accounting for their respective formations and transmutations: but unfortunately the results of the best analysts are at variance upon these points, and although nothing is easier than to frame a series of such formulæ, we must bear in mind that they are at present little else than hypothetical assumptions, though it is possible they may hereafter become expressions of facts when experiments have been multiplied, and our means of research improved.

I have already given the formula for protein; now, if for the reasons stated, we assume protein as the basis of other principles, and tissues, and textures, we then (adopting Liebig's view of the composition of protein) may conceive them as follows:—*Albumen* is a compound of protein with phosphorus and sulphur; *fibrine*, a similar compound, with only half the quantity of sulphur; *casein* contains sulphur, but no phosphorus. *Arterial membrane* is protein, combined with the elements of water; *chondrine* the same with excess of oxygen, and in *hair, horn,* and *gelatinous tissues,* there are superadded the elements of ammonia.

[Mr. Brande made this statement in illustration of the following table, which was exhibited, and in which Pr is intended to represent an atom of protein.]

PROTEIN SULPHUR.

Albumine	Pr.+Phosphorus+Sulphur.
Fibrine	Pr.+Phosphorus+Sulphur.
Caseine	Pr.+Sulphur+Subphosphate of Lime.
Arterial Membrane	Pr.+2 Atoms of Water.
Chondrine	Pr.+4 Atoms of Water+2 Atoms of Oxygen.
Hair and Horn	Pr.+1 Atoms of Ammonia+3 Atoms of Oxygen.
Gelatine	Pr.+3 Atoms of Ammonia+1 of Water+7 of Oxygen.

We have already remarked upon the importance of the substances enumerated in this table as articles of food, and you will further observe, in regard to it, that although I have represented all the above substances as originating from protein, it is only from the three first that protein can actually be obtained, or in which it is ready formed, and these it is which take the lead as essential parts of nourishment; the part performed by gelatine as an article of food is not at all understood; but this we know, that its function as such, is much less important than that of albumine, fibrine, casein, and other forms of ready-made protein; that, in fact, soup or boulli is not nearly so efficient for sustenance as the residuary fibre. I must here remind you, however, that no azotised food can alone support life, though it is essential. It must be aided by a certain proportion in admixture of non-azotised food, and indeed of those amylaceous and saccharine matters, which I have elsewhere represented as compounds of carbon, and the elements of water. The probable cause of this, necessity of a mixture of azotised and non-azotised food, and of the inefficiency of either separately for the support of life, I must again refer to in a future lecture. The sulphur and phosphorus contained in the varieties of albumine, fibrine, &c., to which I have adverted, are curiously combined, so as to be inappretiable by common tests: it is true, that when they putrify—take a rotten egg as an example, these substances, and especially the sulphur, become evident enough; but a fresh egg shews no such indications, and does not blacken those delicate tests of sulphur; the salts of lead and of silver; when an egg is boiled a little sulphur is apparent, and it is well known to tarnish a silver spoon; but if you boil white of egg, with a little solution of potash, and then test it by lead, you have at once the characteristic black precipitate of sulphuret of lead: in this case the water present is decomposed, and its elements form, with the sulphur and phosphorus of the albumen, hydrosulphuric and phosphoric acids. Caseum, as obtained from milk, yields no phosphorus; not at least in the state in which that body occurs in albumen; but caseum contains sulphur, and there is a subphosphate of lime present also in milk, which is requisite for the formation of the bones of the young animal. Having now enumerated the principal alimentary substances characterised by the presence of nitrogen, let me again remind you, that we must go back to *ammonia* as the source of the nitrogen in all these bodies; for although it be true, that animals derive their nitrogen from vegetables, vegetables must derive it from the air and soil. I have already remarked, that the quantity of nitrogen which vegetables derive directly from the atmosphere, is quite insignificant, and that the source of that element upon which they principally depend is ammonia, existing in the atmosphere and soil. But whence is this ammonia derived? Manifestly from the decomposition of organic bodies, and principally from the putrefaction of animal matter, during which a vast quantity of ammonia is formed, and either sent into the atmosphere, or imbibed by the soil, principally in the state of carbonate. And now we see the use of such manures as yield ammonia—that is, of manures composed of azotised organic matter. A good illustration of such a manure is furnished by bones, which, as you have seen, contain a highly azotised principle, which constitutes their *animal part*, as it may be called; and phosphate and carbonate of lime and magnesia forming the earthy part. For the purpose of manure, the bone is ground to powder, and blended with the soil; it decomposes and yields ammonia and carbonic acid, both of which are absorbed and assimilated by the crop, and in particular cases the earthy part contributes compounds essential to the perfect growth of the plant; this is remarkably the case with wheat. Wheat requires nitrogen for the formation of its gluten or protein, it requires carbon and the elements of water for its starch; and among its essential inorganic constituents, without which it cannot thrive, we find silver, potash, magnesia, and phosphoric acid.

In concluding this outline of the history of azotized bodies, and their sources, I must not pass over pit-coal, in which we find a considerable quantity of nitrogen. Coal essentially contains carbon, hydrogen, and oxygen, but all the usual varieties also contain a variable proportion of nitrogen; though frequently, in the analysis of coal, the nitrogen is overlooked. In our common gas manufactories, among the products obtained, ammonia is a very abundant one, and till lately the manufacturers were much hampered with it, and could not tell what to do with it. I have already stated that the ammonia is now very carefully separated in many of the gas-works, and converted into sulphate of ammonia. A variety of other salts of ammonia may also be obtained from the same source, and are among our most efficient manures when properly and skilfully applied: probably, nitrate of ammonia, if it could be procured at a sufficiently cheap rate, would be the most active of all these compounds, but the high price of nitric acid renders it unavailable. Guano, which is the decomposed excrement of sea-birds, is, when genuine and unadulterated, a prolific azotised manure. Saltpetre, also, is supposed to act as is such from the nitric acid which it contains; but its potash may also be useful. I may observe, however, in respect to these and other saline and inorganic manures, that we require further evidence of their *modus operandi*, and that we must be very cautious in drawing conclusions respecting the exclusive dependence of their efficacy upon the presence of ammonia or its elements: for, sometimes, ammoniacal salts appear but as stimuli, or in some other way; and in such cases admit of being replaced by common salt, by sulphate of soda, and probably by other hitherto untried compounds.

POOR-LAW MEDICAL RELIEF.

To the Editor of the 'Medical Times.'

SIR,—Though I quite agree with you, that Union Medical Officers are very inadequately remunerated for their services, it is but fair to state that in several of the Unions alluded to in your leading article of last Saturday, they are paid at a much higher rate than you seem to be aware of. In the Caxton and Arrington Union, according to your statement, they are paid at the rate of only one halfpenny per head upon the whole population. Now, one would naturally conclude from this fact, that the Guardians of the above-mentioned Union must be most illiberal in their treatment of the medical officers; but I hope I shall be able to convince you that they do not deserve such a character. The truth is, the surgeons attached to that Union have no fixed salary, but are paid per case according to the following scale:—

	£	s.	d.
For every permanent pauper, as widows and orphans	£0	3	6
Other cases	0	10	6
Fracture—Leg	3	3	0
Other fractures	1	1	0
Midwifery	1	1	0

From what has been stated, it will be evident that the lowest rate at which the medical officer can possibly be remunerated is 3s. 6d. per case; but, as they receive 3s. 6d. per annum for every pauper receiving relief at the commencement of the year, whether ill or well, and as it will scarcely happen that all, or even half of them, will require medical aid during the year, the surgeons are never paid so little as 3s. 6d. per case *actually attended.* I know for a certainty that the remuneration, on an average of two years, was not less than 12s. 6d. per case.

Neither can I agree with your statement that "The northern counties, and the extreme western, as Cornwall and Devon, are the *least*, the southern the *most* liberal," in their remuneration for medical attendance. It is true, that the southern and some of the midland counties pay much more per head upon the whole population than the northern or extreme western; but it by no means follows that they pay more, or even so much, upon each case actually attended by the medical officer: indeed, I am convinced, from observation and experience, that it is quite the reverse. In most Unions the medical man is paid a fixed sum for his attendance upon the paupers. Now, in the northern, extreme western, and some few of the midland counties, a pauper is understood to be a person actually receiving parish relief, and none but those answering to this description are considered to be entitled to the services of the medical officers. But in the Southern and some of the midland counties, the term, pauper, is not so defined, and the surgeon's duties are consequently much more arduous. For example, there is a Union within thirty miles of the metropolis, whose medical officers are paid at the rate of 5d. per head upon the whole population. Now, to a person unacquainted with the difference of opinion which prevails in different Unions respecting the class of persons entitled to the services of the medical officers, those attached to this Union will appear to be paid four times more than those of other Unions, where the remuneration is only one penny per head; but our astonishment at the vast difference in the rate of remuneration, and our admiration of the *liberality* of this southern Union will cease, I think, when it is stated that the medical officers have to attend, not only those paupers actually receiving parish relief, but also the wives and children of all labourers, even of those who are in constant work and earning good wages, when the family consists of more than three. In short, they are liable to be called upon to attend the whole labouring population.

The system pursued at the Caxton and Arrington Union is, in many respects, I think, worthy of imitation. I must acknowledge that the total sum paid for medical attendance upon the poor is trifling, but I do not see how this can be viewed in the light of a grievance, since the surgeons' trouble must have been equally trifling. It is scarcely necessary to add that none but paupers,

according to the strict definition of the term, were considered to be entitled to gratuitous medical attendance. The introduction of the same system of payment per case into the southern counties would be productive of much good to medical practitioners. It would act as a wholesome check upon the too great liberality which at present prevails, in granting medical, independently of general relief; and surgeons would not then, as at present, be subjected to the annoyance and injustice of being called upon to attend, as paupers, the families of men in the receipt of good wages (15s. or 18s. per week, or even more), and in every other respect independent of the Guardians.

I am, Sir,
Your obedient servant,
MEDICUS BOVIENSIS.

C——dge, 2d May, 1843.

WESTMINSTER HOSPITAL ABUSES.

To the Editor of the '*Medical Times.*'

Sir,—Since the birth of the Medical Times, and during its comparatively obscure infancy, I took a deep interest in it, feeling the want of a journal, which, steering a middle course between the "*ultra*" principles of the *Gazette*, and the extreme opinions of the *Lancet*, would, when based on truth and strict impartiality, and guided by high and responsible talent (*as it now is*), unflinchingly expose the hideous abuses at present defacing the mechanism and curtailing the utility of a noble and sacred science, and which would also protect honest and energetic officers of public hospitals from anonymous slander and mendacious statements. Your paper has by steering this course obtained a reputation, which alike entitles it to weight and respect; it was, therefore, with no slight feeling of regret, that in your number of April 29th I find the "abuses" (*soi-disant*) of the Westminster Hospital made the cloak for some shallow-pated knave, rampant in all the undisguised malignity of private pique, for attacking the private as well as professional character of one of its physicians. Now, Sir, I have been for three years a pupil of that hospital, and filled the situation of *dresser* to each of the surgeons respectively, and was till nine months ago, generally for six hours a day, within its walls, having ample and unusual private and public opportunities of scanning the conduct of its officers, and being also the *Vice President* of the *Medical* Society of the school, I there witnessed the regular and unremitting attendance of the lecturers. I am under deep obligations to all these gentlemen for valuable instruction and courteous demeanour, but am the toad-eater to none, having from severe and unexpected losses been compelled for a time to abandon my career and absent myself from it. However, I am in daily communication with pupils, whose veracity is undoubted; and by giving insertion to this you will be promulgating *truth* to the world. The Hospital is distinguished for its excellent and well ventilated wards, for the extreme nicety of its internal arrangements, and with the school has, and I trust will, produce many rising men. The whole drawback has been party feeling and nepotism, and want of union between the *Medical and Lay Governors*, which, as you announce, is happily subsiding, and the arrangements are now as complete and reforming as any hospital in the metropolis, and I boldly assert that any industrious and energetic student may derive as much knowledge in a given time there as at any other school. Mr. Guthrie is regularly three times a week present, and gives clinical lectures when any case presents itself of any importance. Mr. White, when not confined by severe illness, is equally punctual. Messrs. Lynn and Thomson were and are punctual as clock work, and the two physicians, in attendance, clinical lectures, and post mortem examinations, are indefatigable. Is it not, therefore, too bad to fix on one hospital not a whit worse than its fellows, and mark it out for wholesale condemnation? Is it not too gross that anonymous detraction should through your columns seek to damn a rising school, supported by industry and talent of no common order. Let your correspondent state his name, and I will take up the gauntlet and prove him either grossly ignorant or cruelly false in his statements.

I may also state that I never heard of any certificates fairly deserved being refused. The whole charge then subsides into a personal attack on the private feelings, connexions, and arrangements of Dr. Roe and Dr. F. Bird, a course not only irrelevant in a public journal, but plainly indicating a malignant and cowardly feeling. He cannot surely flatter himself that this crude letter full of glaring mis-statements and ill concealed personal feeling can injure men of high standing, among educated and honourable men. No! in the solitude of his native insignificancy, let its author repent of the temporary monomania which has ended in a climax so fatal to his own "*talent, feeling, or principle.*" I cannot finish without alluding to the constant and most unmerited attack on Dr. F. Bird. The crime he is accused of is *youth*; but, Sir, perhaps, *Mr. Pitt's* celebrated reply to Horace Walpole will convince your correspondent that youth, when accompanied by the *high principle*, courteous demeanour, and very great talent of Dr. Bird, conveys an honor on the school, and must, in time, render the chair, he so eloquently fills, very popular. If tottering limbs and grey hairs are to be the sole passports to posts of trust and honor, then may unrequited genius hide its head, and fly to climes more genial, or droop and die. Trusting this state far remote,

I am, Sir,
Your constant reader,
GEORGE WILLIAMSON.

[The impertinence of youth owes a deep obligation to Lord Chatham. His speech is the unfailing resource of every pert boy when convicted, not of youth, for that happily is no crime—but of an ignorant and tenacious assumption of responsibilities for which no amount of ability and experience can be considered too good qualification. This letter is to us extremely suspicious, and the only genuineness we can attribute to it, from the compliments to us down to those to the "high-principled, courteous and talented" (why not erudite?) young gentleman, Dr. Bird, is the signature. If nepotism and "a hideous system," as Mr. Williamson asserts, prevail, and are to be complained of, how happens it that their *fruits*, the surgeons, the physicians, the teachers, should *all, without exception*, come in for such *exuberant* panegyric? Other points occur to us, which deserve animadversion, but which we must pass; and in truth our only justification for inserting the *guerilla* letter, is our anxiety to give an accused party every possible advantage in the way of testimony—an anxiety which, on re-perusal, has, we fear, in this case, been gratified at some little sacrifice, both of justice and prudence.—Ed.]

MR. CLENDON'S FORCEPS.

(To the Editor of the "Medical Times.")

Sir,—Mr. Clendon has published in the Medical Times of April 29th, a letter which he wishes to pass for a refutation of the charge brought against him of plagiarism, of having claimed to himself the invention of a form of tooth forceps which he knows to have been before proposed and described by another—by Mr. Tomes.

Mr. Clendon pledges his word as a man and a gentleman that he not only was ignorant that Mr. Tomes had written a paper on tooth-forceps but that he never remembers to have heard that gentleman's name before his own book was written.

Now Sir, Mr. Clendon went to Mr. Tomes' instrument maker in his shop, he saw the tooth-forceps in question: let me ask, Sir, would it not be strange if Mr. Evrard. the instrument maker had not mentioned by whom these forceps were proposed, and that they had been ordered for the use of two hospitals and by several dentists and surgeons? would he not, Sir, necessarily have done this in recommending the instruments he had for sale? And if Mr Evrard had made no mention of the proposer, was it not Mr. Clendon's duty, he intending to write a book on tooth-forceps, to have made the inquiry?

Mr. Clendon asks, in what part of his work he has claimed the forceps as his own, as though his describing them in a book written for that purpose, with his name in the title page, and without any mention being made in it that they had been described or used before, were not a laying claim to them as his own: but if this be not enough and Mr. Clendon wish passages to be quoted, it is not difficult to do so; in page 32 of his book Mr. Clendon says, "as far as I have had an opportunity of judging, forceps have hitherto been made on most erroneous principles and generally speaking provided they were large or small, straight or curved, was all that seemed requisite; to adapt them to the various forms and positions of the teeth, no one appeared to consider of any importance;" (in a note he confines this remark to such instruments "as are usually found in the shops of the makers and supplied to the medical profession at the present time,") and again in page 34 he says, "accident at length introduced to my notice an individual, who readily carried out, and it is due to him to acknowledge, improved upon my suggestions. The forceps he made for me, and which are accurately represented in the engravings, leave nothing to desire." I think, Sir, these quotations will answer Mr. Clendon' inquiry where he has claimed the forceps as his own.

The latter part of Mr. Clendon's letter is evidently written to confuse the subject: it is nothing to the purpose whether or not Fay or any other person attempted to carry out the principle of these forceps, the question is whether Mr. Tomes did not in effect first carry out the principle and describe it, and whether Mr. Clendon knowing this has not claimed the merit for himself.

At the time Mr. Tomes first proposed these forceps I was a pupil of the Middlesex Hospital, and I and many others connected with the hospital well recollect the circumstance. I recollect their being ordered for the use of the Middlesex and Kings College Hospitals, I know that Mr. Evrard has ever since kept sets of them in his shop, and has always spoken of them as Mr. Tomes' forceps, I have heard Mr. Evrard say that the principle and construction of the forceps were evidently new to Mr. Clendon when he first saw them in his shop and that he told Mr. Clendon not once, twice, or thrice only, but over and over again, by whom they were first proposed.

Surely Sir, a more gross and unblushing case of plagiarism than this was never before brought forward.

I am Sir,
Your obedient servant,
John Stanton.

10, Grafton-street, Fitzroy-square.
May 4th. 1843

"THERE GOES AGUE DICK IN A FLUTTER."

Brit. and For. Med. Review, Jan. 1843.

To the Editor of the '*Medical Times.*'

Sir,—Dr. Dickson's "fitful fever" of life makes him delirious; he seems to be actually raving. I am much obliged to him, however, for associating Dr. Holland with myself in his charge of plagiarism. It is a great compliment. The "Medical Notes and Reflections" have already taken their place amongst the British medical classics. I am also indebted to him for publishing Dr. Forbes's notice of my "lucubrations." That gentleman's review of the "Fallacies of the Faculty" was certainly not complimentary to Dr. Dickson; but it scarcely did his follies justice—it was too favorable. What opinion could be expressed of the man who can gravely publish to the world, amidst a mass of other absurdities—"that parturition and pregnancies *are* agues—agues in every sense of the word!" Parturition and pregnancy agues! If these be agues it can be easily proved from his own doctrine that Dr. Dickson is in the "family way."

With regard to myself I may state, that since Dr. D. has done me the honor of advertising me extensively in the medical journals and newspapers as a plagiarist of his discourses, I must reward his perseverance by a short notice. In his last communication to your Journal, Dr Dickson asserts that "it has been the labour of his life to

establish the discovery of the periodic movement of all vitality—of the periodicity of life in health—the periodicity of life in disease—of the periodicity of movement of universal nature !"—and that he won't be juggled out of it either by Mr. Wakley or Dr. Holland, or Dr. Laycock, or any one else. Now the plain truth is that the unhappy man has spent his life in trying to crack a blind nut, and his charge of plagiarism is all moonshine. I have never claimed the discovery of the doctrines in question, nor do I, for the simple reason, that they have been known from time immemorial, and are probably just as old as the pyramids.

If after this explicit statement, Dr. Dickson persists in the hallucination that he is a discoverer and I a "pirate," there is no help for it. His friends should look after him.

I am, Sir,

Your obedient servant,

T. LAYCOCK.

York, May 9, 1843.

PERISCOPE OF THE WEEK.

CONSUMPTION.—Mr. Noble states that the township of Manchester, with a population of about 160,000, and with an average of deaths annually of 6,000, afforded 1,141 registered deaths from consumption in 3 years; and, as nearly as can be estimated, 174 of these occurred to individuals working in factories, a proportion somewhat more than one-seventh of the whole, whilst 590 were of persons registered as of various occupations; and 377 without any stated employment, having been for the most part wives and children not attached to any particular pursuit; of these 174 inmates of factories, the spinners constituted 45, the winders 49, the piecers 28, the reelers 15, carders and frame tenders each 11; 10 were stated to have wrought in factories without there being any mention of the precise occupation; and the remainder were doublers, stretchers, batters, &c. &c. none of them exceeding 5 in number;—now when it is considered that the actual township of Manchester includes the more central and more dense part of the population, it is not too much to say that of the inhabitants between 15 and 40, not very much less than one-seventh of the whole are employed in factories: and if so, no corroboration is afforded of the notion that consumption is disproportionately prevalent amongst the factory population.

WATER-STROKE.—Dr. Davey, of Hanwell Lunatic Asylum, narrates the case of a child about 18 or 20 months old, which had been suddenly seized with a fit. It was lying in its mother's lap, apparently dying. The surface of the body was cold, and covered with a clammy perspiration, and the countenance injected and livid, the pupils were dilated, the eyes fixed, and the eyelids partially closed; the mouth contained a quantity of frothy saliva, the respiration was hurried and oppressed, and the pulse rapid and feeble. Dr. Davey opened a branch of the temporal artery, abstracting little short of a wine glassful of blood, and then, having desired the father to press the bleeding orifice with the point of the finger, he administered a little brandy and water. The excellent effects of the treatment became apparent immediately. The surface of the body became warm, the respiration natural, and the pulse reduced. The little patient was perfectly conscious, but much inclined to sleep. A purgative was adminstered a few hours afterwards, and the next day it was perfectly well. Dr. Davey considers this complaint allied to the congestive or serous apoplexy of the adult.

CHOREA AND CARDIAC DISEASE.—Two cases of chorea have been treated in the wards of the Westminster Hospital, in the first of which, after the apparent cure of the chorea, symptoms of pericarditis shewed themselves, and speedily proved fatal. In the second case, the heart affection did not supervene upon the disappearance of the chorea, but co-existed with it, and although the cardiac affection did not assume the severity of pericarditis, yet it was such as admits perhaps of a more ready explanation. It was observed that the pulse became both irregular in volume and distinctly intermitted, the intermissions being sometimes of considerable duration, but not occurring at any regular periods, as may sometimes be observed in certain forms of mitral-valve disease. All this was quite unaccompanied by any general disturbance, nor was there either local pain, dyspnœa, nor any other important symptom, and had not the pulse been occasionally examined, the cardiac affection would altogether have escaped observation. On examining the heart, its action was found to be exceedingly irregular, at one moment tumultuous and rapid, at the next tranquil and slow. The absence of all general disturbance was the same as is observed in chorea, and it is by no means improbable that the heart itself may become affected by that disease, and present the same irregular movements, in common with those muscles which are supplied with nerves of voluntary motion. Dr. Addison observes that derangement of the heart in chorea is by no means rarely indicated by the existence of a distinct bruit, audible over the whole precordial region.

ASCITES.—Dr. Chowne narrates the case of a little patient, in whom ascites was fully formed when she was twelve months old. Various medicines were prescribed with the view of strengthening the constitution, and causing absorption of the effused fluid, but unavailingly, and at last, after several consultations, paracentesis abdominis was determined on, and performed by the late Sir Astley Cooper, when the child was only 15 months old. The girth of the body prior to the operation was 25½ inches: the quantity of fluid removed five pints; it was of a straw color, and contained abundance of albumen. The operation was borne well, and although effusion again took place, it was absorbed, and the little patient ultimately recovered. She became active, healthy, and strong, and is now in all respects in good health. She is now seven years of age. Sir A. Cooper performed the operation with a trocar, expressing his preference for that mode of making the opening on the score of its being less likely than a lancet to wound an artery. The part selected was the linea alba, about an inch and a half below the umbilicus; Sir A. C., remarking that a less distance would not be sufficiently far removed from the union of the umbilical arteries.

DELIRIUM TREMENS.—Dr. Scharn, of Katscher, considers this disease as intoxication at its maximum of intensity, and acting on the faith that ammonia is the most suitable remedy against the effects of ardent spirits, he has recourse to the succinate of that base on the access of the delirium, and he states that he has witnessed the most aggravated cases thereof yield to this remedy in a few days.

HÆMORRHAGE FROM A CERVICAL ABSCESS.—Mr. Miller mentions a case of suppuration of the glands of the left side of the neck, following scarlet fever in a patient two years old, in which the abscess was opened, and its contents discharged. Four days afterwards he was sent for hastily in consequence of hæmorrhage having occurred to a considerable extent. On his arrival he found the abscess distended with coagula, and a small stream of florid arterial blood constantly flowing from it, which he could not repress. The child died in five days from exhaustion. Permission to examine the body could not be obtained.

VERBASCUM.—The verbascum nigrum and the verbaseum blattaria, (purple mullein) indigenous productions of Great Britain, Mr. Lane states, possess a peculiarly modified narcotic influence. The verbascum thapsus is merely a demulcent. The leaves, he considers, to be the best adapted for medicinal purposes, and they should be gathered at an early period of the plant's blowing. The root, he thinks, is nearly inert. He used a tincture prepared with two ounces of the dried leaves to sixteen of diluted spirit, with which he experimented on cats and dogs, giving from six drachms to an ounce and a half in divided doses in from twenty-five minutes to an hour and a half. Sensibility and motor power were quickly reduced; the action of the heart and arteries was diminished; the respiration became slow and laborious; deep sleep ensued, and the fœces and urine were discharged involuntarily; the pupils were then found to be insensible to light; the posterior extremities became completely paralytic; and after slight convulsive movements, life was extinguished. It required, however, that the tincture should be given at regular intervals, so as to maintain its influence, or gradual recovery would take place, even when the poison appeared to have assumed a powerful control. On post mortem examination, no organic change of any description could be discovered, the appearances being uniformly as follows; slight effusion of serum at the base of the brain and in the ventricles, affording a strong odour of verbascum; the lungs somewhat gorged with blood, and containing much frothy mucus; the cavities of the heart nearly empty; the liver somewhat vascular; the blood dark and liquid, and, like all the other fluids, strongly impregnated with verbascum. From the result of his experiments on man and animals, Mr. Lane concludes that in the two varieties of verbascum previously named, we have a mild but efficacious sedative, somewhat peculiar in its action, and at the same time probably in some respects more agreeable to the system in its modus agendi than any other. He believes its action to be essentially on the nervous system like that of other sedatives derived from the vegetable kingdom. He has been induced for these considerations to administer it alone or in combination, in numerous cases of chest affection, particularly in phthisis, bronchitis, with or without emphysema, with much benefit; also in cases of cardiac disease he has found it a valuable sedative, and he believes further that it will be found an efficient medicine in pertussis, the irritation of dentition, dropsy, and rheumatism. He proposes to give it a further trial, and asks for the co-operation of his medical brethren.

LACTUCARIUM.—The inspissated juice of the lactuca, obtained when the plant is in flower, has been acknowledged by various writers to possess the sedative properties of opium, without any of its inconveniences, that is to say it does not produce either the obstinate constipation, or the cerebral congestion, which so often accompany the use of that drug. Dr. Duncan says it is peculiarly adapted in nervous diseases and for hypochondriacs. Real lactucarium is obtained in very small quantity and is consequently very rare. An extract has accordingly been prepared from the entire plant as a substitute for it; but it is very imperfect and inefficient. The active principle, which is concentrated in the milky juice, is, in the extract, diluted with the useless substances which assist in constituting its bulk, supposing it exist there at all, for, as analysis shews that it is almost insoluble in cold water, it ought to remain behind in the residuum, instead of being in the

juice, which is used for the preparation of the extract. Lactucarium is of a brown colour, friable, and dry, the extract is black, soft, and diliquescent. M. Aubergier, the assistant professor at the School of Medicine in Clermont, Feraud, has analysed the lactucarium and gives the following as the result of his experiments; it contains a bitter crystallizable matter, mannite, asparamide, a crystallizable matter colouring the salts of iron green, an electro-negative resin combined with potass, an indifferent resin, carbonate of potass, cerine, myrinne, pectine, albumen, the binoxalate of potass, malate, nitrate, and sulphate of potass, chloruret of potassium, the phosphates of lime and magnesia, the oxides of iron, manganese, and silica. The most remarkable substance indicated in this analysis is certainly the bitter crystallizable matter which is to the lactucarium what morphia is to opium, with this exception that the one is neutral and the other alcaline; this matter, soluble in weak and strong alcohol, whether hot or cold, is almost insoluble in cold, but more soluble in hot water; it is completely insoluble in ether, and is very readily decomposed when brought into contact with alcalies. Aqueous preparations of lactucarium are consequently nearly inert. The dose of it in substance has never been more than six grains.

Bright's Disease.—Dr. Taylor, clinical physician at the University College Hospital, in a clinical lecture, on a case of anasarca, traces the dropsy to Bright's disease of the kidney, because the urine was pale, its specific gravity was low, 1,010, and it contained one fourth of its bulk of albumen, the albumen being constantly present. The general superficies of the body was very pale. The patient was also labouring under two secondary inflammations, viz., of the pleura and lungs, the result of the renal affection, unattended by active symptoms, and in addition, the intellect was remarkably dull with a degree of stupor and some deafness, not caused by natural stupidity, for he could be roused from that state, which a stupid person could not be. The series of effects referable to the head were, change of temper, dulness of intellect, a degree of drowsiness and stupor, and dilatation of the pupils, and epileptic fits, all caused by the disease of the kidneys. All these symptoms are mentioned by Rayer in his elaborate and detailed account of the disease. The serum of the blood contained one grain and a half of urea, or three grains of the nitrate, to the ounce of fluid.

Uric acid Calculi.—Uric acid either pure or united with a base, forms the first step towards the formation of eleven-fifteenths of all calculi in the human subject. It may be obtained in a state of purity by dissolving an uric acid calculus in a boiling solution of potassa; the filtered liquid is to be decomposed by the addition of an acid, when the uric acid is precipitated in the gelatinous form, and, after a few hours, is converted into a mass of shining crystals of a white colour and pearly lustre, tasteless, inodorous, scarcely soluble in cold, rather more so in hot water; its solution feebly reddens litmus paper. It was first discovered as a constituent of urinary calculi by Scheele in 1776.—Uric acid is precipitated from the urine in the form of crystalline particles, solid masses, or amorphous impalpable powders. In the latter case it is never in a state of purity, but is always mixed with urate of ammonia and some peculiar colouring matters. Uric acid calculi are divisible into two varieties, differing in general appearance and structure, as well as probably in the mode of formation. The structure of one is laminated, and its texture compact and semi-crystalline, its surface is commonly smooth though sometimes granular and finely tuberculated, the tubercles being smooth and polished. When broken, it presents a fibrous appearance as if made up of the crystalline fibres radiating from the centre. In the more dense calculi the fracture is vitreous, and possesses a high lustre. In the other variety, the lamellar structure is imperfect or totally wanting; its surface is usually rough, and it has a porous and earthy texture. Its fracture is granular and unsymmetrical. These two forms are frequently more or less mixed together, or pass by insensible gradations into each other. Dr. Prout has described a modification of the laminated calculus under the name of the *pisiform* concretion; it is characterized by its small size, seldom exceeding that of a large pea, by the great numbers in which it is produced, and by its occurrence at an advanced period of life.—Uric acid calculi vary considerably in color, but are usually of a yellowish-brown or brownish-red tint. They sometimes break up spontaneously in the bladder, the laminated variety being the more liable to undergo that change. It is often exceedingly brittle. The uric acid calculus when heated becomes black, emits a peculiar odor, and gradually consumes, giving off a large quantity of hydrocyanate and carbonate of ammonia; there is generally left a minute white alcaline ash, which is pure lime, and results from the decomposition of a small quantity of urate or oxalate of lime. It dissolves readily in a boiling solution of caustic potass, and if to the solution a few drops of hydrochloric acid be added, the uric acid is precipitated, presenting at first a gelatinous appearance, but quickly becoming a crystalline powder; the presence of urate of ammonia is indicated by the evolution of ammonia during its solution in the potass; it may also be detected by digesting the calculus, previously reduced to powder, in boiling water, for a few minutes, and filtering while hot; the urate of ammonia dissolves, and on cooling, precipitates, either as an amorphous powder, or as little stellated crystals, which, with the aid of a lens, are readily distinguished from crystals of uric acid. If a small fragment be heated in a watch-glass with a few drops of nitric acid, violent effervescence takes place, and it is dissolved; if the solution be cautiously evaporated to dryness, the residue acquires a beautiful pink color, from the formation of a substance termed purpurate of ammonia or muroxid. This test is exceedingly delicate, and characteristic of uric acid, but cannot be relied on alone. Uric acid is sparingly soluble in boiling water, and is deposited on cooling in rhombic prisms.

Cotton-spinners.—Dr. Taylor, in his report, states that the 19 cotton-mills in Manchester which are engaged in spinning fine yarn, worked 69 hours per week; they employed 837 adult spinners, of whom 255 or nearly $30\frac{1}{2}$ per cent. were absent from work on account of sickness in the year 1832, an aggregate of $6296\frac{1}{2}$ days, or an average of $24\frac{1}{2}$ days for each of the 255 who were sick, of $7\frac{1}{8}$ days for the whole number of spinners employed. Of the 837 spinners, 621 or 74 per cent. reported themselves to enjoy '*good*,' 171 or 24 per cent. to enjoy '*pretty good*,' and 45 or about 2 per cent. to have '*indifferent health*.' The married spinners had 3,166 children—640 of these had worked in cotton mills, and 58 had worked at other employments. Out of the 640 who had worked in mills, 18 or about $2\frac{3}{4}$ per cent. were dead; and out of the 58 who had worked at other employments 4 or nearly 7 per cent. were dead. The cases of distortion were 8 or $1\frac{1}{4}$ pr cent., and there were 7 cases or rather more than 1 per cent. of mutilation from machinery.

Prussic Acid Drawn Mild.—Sir George Lefevre, in recommending the aqua lauro-cerasi, describes it as being "prussic acid *drawn mild*," and says it is a safer preparation, and most useful in spasmodic affections of the stomach, in hypochondriac uneasiness, in hysteria combined with pain about the uterus, &c. The dose may be increased from ten to forty drops. It is rather singular that at the time when Sir George is recommending it to the notice of British practitioners as a more safe and available medicine than prussic acid, continental physicians should decry it for its uncertainty, and the consequent danger resulting from its use.

MEDICAL NEWS.

University Hospital School.—*Chemistry* (Professor Graham). Gold medal, John Newton, of London: First silver medal, W. B. Randall, of Southampton: Second silver medal, equal, C. E. Goodman, of Northampton, T. F. Grimsdale, of Uxbridge; Silver medal (essay), Charles Prentice, of Kingston-on-Thames. — *Medicine* (Professor Williams). Gold medal, H. Fearnside, of Otley, near Leeds: First silver medal, J. Hakes, of London: Second silver medal, F. J. Brown, of Rochester.—*Anatomy and Physiology* (Professor Sharpey, M.D.) Gold medal, Robert D. Harling, of Chester: First silver medal, B. M. Eyre, of London: Second silver medal, N. Brangwin, of Henley-on-Thames.—*Comparative Anatomy* (Professor Grant, M.D.) Gold medal, F. W. Marshall, of Norwich.—*Anatomy* (Professor Quain.) Senior Class, silver medals, equal, F. J. Brown, and N. Brangwin: Third silver medal, H. Vevers, of Dormington: Junior Class, silver medal, W. Cadge, of Norfolk.—*Materia Medica* (Professor Thomson, M.D.) Gold medal, Henry Sutherin, of London: First silver medal, Henry Ward, of Northampton: Second silver medal, W. H. Colborne, of Chippenham, Wilts — *Midwifery* (Professor Murphy, M.D.) Gold medal, Thomas S. Lee, of Cambridge: First silver medal, Alfred J. Tapson, of London: Second silver medal, Henry James Stokes, of London. — *Surgery* (Professor Cooper.) Gold medal, G. Y. Heath, of Westoc, Durham: First silver medal, Henry James Stokes: Second silver medal, Thomas S. Lee.—*Summer Term*, 1842. *Pathological Anatomy* (Professor Walshe, M.D.) Gold medal, P. H. Williams, of Wem.—*Botany*, Senior Class (Professor Lindley, Ph. D.) Gold medal, A. Jackson, of Portsmouth: Silver medal, W. Brown, of Cornwall.—*Medical Jurisprudence* (Professor Thomson, M.D.) Prize, Charles J. Tomkins, of Abingdon, Berks. — *Zoology* (Professor Grant, M.D.) Silver medal, Edward Ballard, of London.—*Fellowes Clinical Medals.* Summer Term, 1842; Gold, A. J. Tapson: Silver, T. S. Lee. Winter Term, 1843; Gold, Richard Tudor, of London.

St. Bartholomew's Hospital Prizes.—*Bentley Prize for the best Report of Medical Cases.* — Awarded by Mr. Bartley, to J. H. Wise, Banbury.—*Wix Prize, for best Essay on the Connexion between Revealed Religion and Medical Science.* Awarded by the Rev. W. Wix, to H. Mitchell, Cambridge.—*Clinical Surgery.* Awarded by Mr. Vincent, to J. Bloomfield, London, prize. — *Surgery.* Awarded by Mr. Lawrence, to W. S. Kirkes, Lancaster, first prize; J. Bloomfield, London, second prize; H. Mitchell, Cambridge, third prize.—*Principles of Medicine.* Awarded by Dr. Burrows, to J. H. Wise, Banbury, first prize; J. Bloomfield, London, second prize.—*Clinical Medicine.* Awarded by the physicians, to J. H. Wise, Banbury, prize.—*Anatomy and*

Physiology. Awarded by Mr. Stanley, to E. Dewes, Coventry, first prize; W. S. Kirkes, Lancaster, second prize; G. Hoursbrow, Lancaster, prize.—*Midwifery* Awarded by Dr. Rigby to C. Natherly, Bideford, first prize; T. M. Girdleston, Norfolk, second; J. Bloomfield, London, hon. certif.; and T. R. Evans, Norfolk, hon. certif.—*Practical Midwifery.* Awarded by Dr. Rigby to H. Aldam, Essex, hon. certif.—*Chemistry.* Awarded by Mr. Griffiths to J. Hoursbrow, Lancaster, first prize; J. F. Reeve, Lancaster, second prize.—*Materia Medica.* Awarded by Dr. Roupell to G. Hoursbrow, Lancaster, first prize; J. G. Hallams, Lancaster, second prize; H. E. Shaw, Lancaster, third prize.—*Botany.* Awarded by Dr. Farre to E. Jewes, Coventry, prize.—*Forensic Medicine.* Awarded by Dr. Baly to J. H. Wise, Banbury, prize.

Charing-cross hospital.—Medical college.—The Annual Distribution of Prizes to the Pupils and Students most distinguished for their acquirements during the past sessions in the various branches of Medical Study, took place, on Monday, 1st May, in the Theatre of the Hospital. The Rev. Dr. Worthington in the chair.—*Summer Session*, 1842. *Midwifery.* Senior classes, students of two sessions (equal) Mr. W. Sharp, Mr. A. Taylor, Nether Crawley, Luton, Beds. Senior classes, student of one session Mr. W. L. Echlin, London.—Junior class, Mr. Noyce, London.—*Medical Jurisprudence.* Mr. M. Teevan, Kennington.—*Winter Session*, 1842-3. Exhibition of 15*l.* per annum. Mr. Frederick Nicolle, Jersey.—*Medicine.* Senior class, Mr. R. C. Golding, London. Junior class, Mr. G. F. Boswell, Warwick.—*Surgery.* Senior class, 1. Mr. R. C. Golding. Two equal, Mr. W. L. Echlin; Mr. John Terry, Bath. Junior class, Mr. G. F. Burroughs, Shepton Mallett; Mr. R. R. Crucifix, London.—*Midwifery.* Student of three sessions, Mr. H. J. Davies, London. Students of two sessions, Mr. James Yate, Madeley, Salop; Mr. G. F. Burroughs.—*Physiology.* Senior class, Mr. Thomas H. Huxley, Ealing. Junior class, Mr. Alfred Clark, Twickenham.—*Practical Anatomy.* Senior class, Mr. John Terry; Mr. W. L. Echlin. Junior class, Mr. Frederick Nicolle; Mr. Alfred Clark.—*Chemistry.* 1. Mr. Thomas H. Huxley; 2. Mr. Robert H. Cubitt, City-road.—*Materia Medica.* Class Prize, Mr. J. O. Hides, Wisbeach. Essay Prizes, 1. Mr. Alfred Clark; 2. Mr. W. Bainbridge, London.—*Natural Philosophy*, Mr. Robert H. Cubitt.—*Diligence and Good Conduct*, Mr. John Moore; Mr. James E. Huxley, Ealing; Mr. W. L. Echlin; Mr. Edmund T. Clarke, London.

King's College Hospital Prizes.—*Medical.* Scholarship, 40*l.* a year; William Henry Parsey, prize; T. Hawkesley, books.—*Div* 1. Medicine, Surgery, and Midwifery. William Henry Parsey, first prize; Samuel H. Steele, second prize; A. B. Andrews, T. Hawkesley, R. C. Golding, E. Thomas, certificates of honour.—*Div* 2 Materia Medica, and Physiology. B. L. Jemmett, first prize; James Duncan, second prize; Charles Roberts, certificate of honour.—*Div.* 3. Anatomy and Chemistry. John Ody, first prize; James Duncan, second prize; F. J. Hensley, H. G. Collitt, certificate in anatomy.—*Botany.* J. H. Blount, prize; James Duncan, F. C. Ellerton. certificate.—*Forensic Medicine.* Matthew Baines, prize; A. B. Andrews; R. C. Golding, J. H. Blount, æq.—*Comparative Anatomy.* W. J. Preston, B. L. Jemmett, prizes; R. J. Spilla, J. G. Grylls, æq.—*Medical Society's Prize.* B. L. Jemmett.—*Warneford Prizes.* First gold medal 10*l.*, books 15*l.*, to W. H. Parsey; second gold medal 5*l.*, books 10*l.*, to F. G. Hensley.—*Leathe's Prizes.* First bible, B. L. Jemmett; second prayer-book, W. G. Dalgairns.—*Medical Associates.* S. H. Steele, R. P. Dodd, W. H. Parsey, Dr. Thomas Inman.

Dr. L. Playfair, Professor Owen, Dr. D. B. Reid, are appointed with others, Commissioners for Inquiry into the present state of large towns and populous districts in England and Wales.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 191. Vol. VIII. LONDON, SATURDAY, MAY 20, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE VI.

I brought before you last Saturday an important class of organic bodies characterised by the presence of nitrogen as one of their ultimate elements, and I took occasion to subdivide them into three classes:—1. *Alimentary bodies;* certain of them essential, and others, as it were, auxiliary.—2. *Non-alimentary;* among which, many are poisons. —3. *Gelatinous;* gelatine may, however, be considered as an alimentary principle, though unfit in itself for the support of life. The alcaloids and certain colouring, and other principles, some of which are abundant in nitrogen, I shall reserve for future notice.

We now proceed to another important class of proximate organic principles, which may be called the *non-azotised*, and which are also *alimentary* substances, and in respect to their principal varieties, and ultimate constitution, I may refer to this tabular view.

				Atoms. Carb. + Atoms. Water.	Per Cent. Carb. + Water.
Lignin	C12	H8	O8	12+ 8	50.0+50.0
Caramel	C12	H9	O9	12+ 9	47.0+53.0
Starch / Dextrine / Gum	C12	H10	O10	12+10	44.4+55.6
Cane Sugar	C12	H11	O11	12+11	42.1+57.9
Milk Sugar	C12	H12	O12	12+12	40.0+60.0
Mushroom Sugar	C12	H13	O13	12+13	38.1+61.9
Grape Sugar	C12	H14	O14	12+14	63.3+63.7

Lignin is woody fibre; *caramel* may be considered as sugar deprived of water; and *dextrine* is the term applied to a particular kind of gum, into which starch is convertible.

You will observe from this table that the relative proportions of the ultimate elements of the substances which it includes, is such that they may be represented as compounds of charcoal and water. I do not of course mean, literally, that by combining charcoal and water we can produce these bodies, but that if we take starch, for instance, we may resolve it into carbon, hydrogen, and oxygen, the hydrogen and oxygen being in the same proportions as they are in water. So that, if you abstract the elements of water from sugar, you convert it into woody fibre, and if you add the elements of water to woody fibre, you convert it into sugar. In regard to this remarkable constitution of these bodies, we have further to remark, that we can, by artificial means, convert certain of these substances into certain others.—We can, as I shall have occasion to shew you presently more in detail, easily convert starch into gum;—we can convert gum into sugar, and we can convert cane sugar into grape sugar, and so on; effecting transmutations in at least one, if not in the other, direction. Nature is continually effecting changes of this kind, and you will observe that starch, which is laid up in certain plants at particular periods of their growth, at another period is taken up and disappears—in fact, it is converted into gum and into sugar; and we find occasionally that these transmutations go on to a very sensible extent; for instance, let us look at what happens in the germination of a seed, or the growth of a bud. You find a quantity of starch laid up as a kind of store, to which the seed or the bud goes for its food. Then we find that the process of vegetation is capable of converting that starch into gum and into sugar—you observe the gum in a sort of viscid exudation, which takes place from certain plants during the vernal evolution of their buds: and when a seed begins to germinate, a similar metamorphosis of its amylaceous matter into gum or dextrine, and of this, into sugar, is observable; in this case a curious product called *diastose* of which more hereafter, is concerned in the phænomena: the change which barley suffers in its conversion into malt, is a good example of this production of sugar. By a variety of artificial operations we can also convert starch into gum, and wood into varieties of gum and sugar. Starch may be considered as an organised form of matter; sugar, though organic, is evidently not organised; it, you know, exhibits a distinctive character of non-organised matter, its susceptibility of exhibiting a regular angular or crystalline form. Gum appears to be a substance intermediate between starch and sugar; and in starch we have the decided features of an organised body. Here is a sketch of the appearance of certain varieties of starch as shewn by a good microscope. It exhibits itself as small globules, apparently composed of concentric layers, and there is a small spot, or mark, on each globule, which is called the hilum, and which may possibly be the point at which the starch globule has been attached to the cell in which it was formed; for I should tell you that these starch globules are formed in the cells of vegetables, and are gradually loosened and thrown off. Now, looking chemically at these substances, we have sufficiently simple means of recognising and separating them from each other. Starch globules are insoluble in cold water, but are disintegrated, and yield a mucilaginous solution in water of 170 deg. or 180 deg. Common gum is soluble in cold and in warm water, but it is insoluble in alcohol; and so is starch. Sugar is soluble in water and in alcohol at all temperatures. Thus we find, that in many instances, we are enabled to separate sugar from starch and gum, by the help of alcohol. Woody fibre is alike insoluble in alcohol and water, and is the usual residue of the vegetable texture after starch, gum, sugar, and other soluble matters have been removed by the successive application of proper solvents.

Another, and a very important class of non-azotised organic principles, belonging both to animals and vegetables are the varieties of *fat*, including also the fixed oils, of which there are many varieties; their ultimate composition is perfectly distinct from the group we are now more particularly considering, for they are characterised by excess of carbon and hydrogen. I only now allude to these, that you may not suppose them to have been overlooked, inasmuch as they properly rank among *alimentary* principles. I propose to take them up in detail afterwards, and shall now ask your attention to some further particulars respecting the starch and its associates.

In adverting formerly to gluten, I showed that by washing common wheat flour in water, starch was separated, and that if the milky water which flowed off, was allowed to remain for sometime at rest, starch in the form of an insoluble white powder was deposited. But as thus first obtained, the starch is not pure, it is contaminated by gluten and other things, but may be purified by suffering the supernatant liquor to enter into fermentation, by which a little acetic acid is produced, which tends to dissolve part of the foreign matters. By washing and subsidence, these impurities are further separated, and ultimately the starch is drained, dried, and after being made up in papers, it is finally stoved. When these papers are opened, the mass of starch easily separates into those curious columnar pieces, technically called the *race*.

An entirely new mode of manufacturing starch, which yields an article of excellent quality, and by a comparatively cleanly and expeditious process, has lately been patented by Mr. Orlando Jones, in which the gluten of the grain is removed by the solvent power of a very weak solution of caustic soda: a strong solution of this alkali, dissolves as you see, both the starch and the gluten, and forms a curious viscid magma; but by appropriate dilution, the action of the soda may be limited to the exertion of its solvent power upon the gluten only: in this way, aided by washings and subsidences, the gluten, fibre, and other extraneous matters, are effectually removed, and a very nice pure starch is obtained. One of the great merits of this new process is, that it enables the manufacturer to substitute rice for wheat; for if we endeavour to make starch from rice in the usual way, it is extremely prone to run into fermentation, and exhales a most pernicious and unpleasant odour, and although the consumption of wheat for the manufacture of starch is not very considerable, it is a question how far the superseding the manufacture of starch from wheat by the use of rice may not be important.

There are many other varieties of starch known in commerce besides those from the cereal grains. If for instance we wash potatoes, and put the raspings into a sieve, and let water run through it, the water passes away milky, and deposits *potatoe starch.* In the same way starch is obtained from a variety of other substances; *arrow root* for instance, is procured from the root of *maranta arundinacea*, and what is termed *East India arrow root*, is the starch of a species of *carcama*; and *sago* is the starch of the pith or cellular matter of certain *palms*. The article sold under the name of *India corn starch*, is only potatoe starch; what is called *tous les mois*, is the starch of the *canna coccinea*.

[Mr. Brande here exhibited a diagram shewing the peculiar and distinctive characters of the granules of the varieties of starch, as indicated by the microscope and polariscope, and made some remarks upon the important aid which the chemist derived from the cautious use of those instruments.]

An important character of starch is, its solubility in hot, but insolubility in cold water. Starch however, is dissolved only in part, for there are always a number of little films floating about, which afterwards subside and appear to be the membranes of the starch granule, and ligneous; the soluble part being comparatively distinct. Starch is perfectly insoluble in alcohol; it is soluble in strong alkaline solutions, and in acids. There is a beautiful test of starch, which is iodine, and which, when in a free state, forms a blue compound with it.

[Mr. Brande shewed the formation of this compound by triturating iodine with starch, and also by mixing solutions of iodine and of starch in water.]

This iodide of starch is only permanent, as far as colour goes, at common temperatures; and if we pour the deep blue liquid into boiling water the colour disappears. Alkalies also decolour it. Such then are the characters by which we distinguish starch from other organic products. Its property of forming a deep blue iodide has occasionally been applied to secret correspondence, or in the way of what has been called a sympathetic ink. If we write with a weak solution of starch, the writing becomes invisible when dry, but is immediately rendered legible, and in blue charac-

ters, when carefully washed over by an aqueous solution of iodine.

Most of the compounds of iodine are not thus affected by starch; but when any agent is presented to them by which they are so decomposed as to set the iodine free, the blue colour is immediately produced. For instance, if I mix a solution of iodide of potassium with a solution of starch, there is no appearance of discolouration; the iodine, being in combination with potassium, cannot act on the starch. But, if I liberate the iodine by the addition of a little nitric or sulphuric acid, or by adding a minute quantity of a solution of chlorine, it then re-acts upon the starch, as announced by the instant change of colour. In this way I get another of those so called sympathetic inks. Characters are stencelled upon this piece of paper with a mixed solution of iodide of potassium and starch, and you observe that they become immediately legible by holding near them a solution of chlorine.

Iodine may also be thus evolved and made an active test by the agency of electricity, and in this way we may apply starch in a striking and effective way, to the detection of iodine in mineral waters. For this purpose I evaporate the water suspected to contain a combination of iodine down to a small bulk; I then add to it a little mucilage of starch, and immerse into it the platinum electrodes of a small voltaic battery. If iodine be present it is immediately liberated at what we usually call the positive pole or electrode, and there it instantly blues the starch.—[Mr. Brande illustrated this by experiment.]—One other property of starch is its power of combining with oxide of lead. If I take a solution of starch and mix it with a solution of subacetate of lead, a white powder falls, which has been called amylate of lead, and the analysis of this compound enables us to determine the equivalent or atomic weight of starch; that is, to ascertain what weight of starch enters into combination with an atom or equivalent of oxide of lead.

Having thus sufficiently described and identified starch, we may now examine the properties of *gum*, of which there are two leading varieties: gum arabic, or *arabin*, may be taken as the type of one of these, and gum tragacanth, or *tragacanthin*, as the type of the other series. Their ultimate composition is the same; they appear to be isomeric varieties of the same principle, and by long boiling in water, tragacanthin becomes converted into arabin. Their characteristic distinction is this, that arabin readily dissolves, and forms a viscid or mucilaginous solution, with cold or warm water, whereas tragacanthin imbibes water and swells up to many times its original bulk, without at first dissolving: by boiling, however, it dissolves, and on evaporating the solution carefully to dryness, the residue differs little from arabin. Gum arabic is the produce of the *acacia vera*, and gum tragacanth is obtained from a species of *astragalus*.

Gum readily combines with oxide of lead, and if solutions of gum and subacetate of lead be mixed, a kind of white coagulum is formed, which is insoluble in water, and which is, in fact, a definite compound of gum and oxide of lead—a *gummate of lead*. Gum is not affected in colour by iodine, so that this, with its other characters, which I have shewn you, enables us to separate and distinguish it from starch.

Our next proximate principle is *sugar:* it is easily recognised by its ready and perfect solubility in hot and cold water, and in alcohol, and by its sweet taste. If we take a pretty strong solution of cane sugar and let it stand, it deposits beautiful crystals which are flattened six sided prisms. Two kinds of sugar are referred to in this table, viz., *cane sugar*, and *grape sugar*, both of vegetable origin; a substance is also obtained from milk, known under the name of *sugar of milk:* it is a hard crystalline substance with very little sweetness, having, perhaps, more of the characters of a species of gum, than of sugar. We also find a peculiar species of sugar in the root of the liquorice plant which has been called *glycyrhizin*, and another in some of the mushroom tribe.

Honey sugar is identical with grape sugar; it is distinguished from cane sugar by not crystalizing, or at least only with great difficulty, when it forms small radiating tufts, and it has a comparatively low sweetening power. If I dissolve cane sugar in water, and expose the mixture for a long time to a temperature a little above its boiling point, it gradually becomes converted into grape sugar. Inasmuch as grape sugar is obtained from a great variety of fruits, and is produced artificially in various ways, it becomes necessary to distinguish it by some term, and Dumas has proposed to call it *glucose*. You often see it upon old dry raisins, and the surfaces of dried figs are usually covered with it.

When the phenomena of fermentation are before us, I shall give you the history of the transformations of sugar into alcohol, and you will then find this modification of sugar playing an important part, for cane sugar cannot be converted into alcohol; it must first pass into grape sugar.

There is a good illustration of the conversion of sugar, starch, gum, and substances of that kind into charcoal and water, which I may bring in here, and which depends on the rapid action of sulphuric acid upon them. If I mix sugar, or what answers better a strong syrup, with oil of vitriol, the mixture becomes brown, and presently afterwards a violent action attended by effervescence and the evolution of much heat, and of steam and acid vapours ensues, and a carbonaceous magma remains in the glass; in this case charcoal and water are the principal though not the only results. When starch, gum, &c. are similarly treated, the same general results are obtained, only the action is usually less intense and rapid.

There is another substance belonging to this class, and an important one, namely, *woody fibre*, or *lignin*. If I subject beech or birch sawdust, or that of any of the non-resinous woods, to the successive actions of alcohol, weak alkalis, and water, I gradually extract all its soluble ingredients, and leave an insoluble, tasteless and inodorous white or grey powder, which is *lignin*. You have the same substance in cotton, hemp, flax, and substances of that kind. The ultimate composition of woody fibre may be represented as 12 carbon, and 8 water; unsized, or filtering paper may be considered as nearly pure woody fibre; and all the common varieties of white or writing paper have it for their basis, only they are *sized* to prevent the ink from spreading, and are often adulterated, as I may call it, by the addition of gypsum and other make-weights.

I may now mention some of the transformations or metamorphoses of wood, starch, gum, and sugar. If I carefully mix lignin with oil of vitriol, so as to avoid violent action by keeping the mixture cold, it becomes converted into a species of gum; and if I boil this for several hours, the gum passes into sugar. In this way, I can convert linen rags, or any other form of a woody fibre, into sugar. So also in regard to starch: if I boil starch and water acidulated by sulphuric acid, it gradually loses all the characters of starch, and becomes saccharine; and now I find that the matter in solution is identical with grape-sugar (not with cane-sugar). We know that the same processes are going on in the vegetable world: when the plant is growing you find that starch is converted into sugar. Take, for instance, the potatoe—a mealy potatoe is that form which contains the largest quantity of starch, and if we look at a section of the potatoe under the microscope, we find a number of small cells filled with an albuminous liquor, in which the starch globules are floating. If the starch globules are deficient, the potatoe is waxy.

[Mr. Brande here referred to drawings of sections of the potatoe, and of its starch globules, taken from Dr. Pereira's work on Materia Medica, and briefly alluded to the soils and cultivation by which the qualities of the potatoe are modified.]

These metamorphic changes of the proximate principles now under consideration are so numerous, and in some instances so complicated, that I can here only touch upon them very generally; they are curiously concerned in the process of malting.

If we steep barley in water, by the action of the moisture and a due temperature it begins to vegetate; and when this process has gone to a certain extent,—that is, when the maximum of sugar has been formed in the grain—the process of germination is put an end to by drying and heat: now in this case, a portion of the grain has become converted into gum and sugar in consequence of the simultaneous formation of a new principle called *diastase*, a principle which is capable of effecting the successive transmutations of starch, to which I have just alluded. Diastase may be separated from malt, by a process I shall afterwards describe, and here I have some of it—it is a pulverulent substance, and its action upon starch is extremely remarkable; in fact, if to a thick starch jelly, I add a little solution of diastase, it presently liquifies and becomes as thin as water, and if I leave this to itself for a few hours, especially if the temperature be raised, the starch becomes sugar. This is what happens in the mash-tun of the brewer. We set out with a liquid that has not much sweetness in itself, and we find that after a time, it becomes highly saccharine in consequence of the transmutation of the starch of the grain into that variety of sugar which I have named grape sugar or glucose, and which as I have already hinted, is a necessary step to the subsequent production of alcohol in the process of fermentation.

This then is what takes place during the germination of grain, and the evolution of buds. Starch and gum disappear, and are replaced by sugar. Potatoe starch is a very cheap article, and sugar can be made from it at the rate of 4½d. or 5d per lb.; it is made to a large extent, and I believe has been employed in adulterating common brown or moist sugar; the peculiar flavour of it generally passes unheeded.

I must not conclude this subject without adverting to some of the changes which wood undergoes by the long continued action of air and moisture at a certain temperature.

You will observe that in many ponds surrounded by trees, there is a great quantity of black or carbonaceous mud arising out of a peculiar decomposition of the leaves and wood which have for years been dropping into the water: the water itself is brown, and tastes what we call mouldy, and bubbles of inflammable gas, which is a species of carbureted hydrogen, and of carbonic oxide and carbonic acid are seen frequently rising up from the bottom, and abundantly if we disturb the muddy deposit.

Now a slower, but in some respects analogous change, is concerned in the formation of what we call vegetable mould. The leaves and droppings of trees and plants accumulate and decay, and contribute the organic ingredients, which, mixed with certain mineral substances, or in fact, metallic oxides, constitute the common soil; now the organic matter of the soil, which has been called *humus* and *humic acid*, according as it is insoluble or soluble, has the property when in the contact of oxygen, of forming carbonic acid; it does this very gradually, but its tendency is to present carbonic acid to the roots of vegetables, and if it is absorbed, or if it makes its escape from the surface, its formation is continued; if not, that is if the humus is every where surrounded by an atmosphere of carbonic acid, no further change ensues; and thus it is that this humus accumulates, and that the carbonaceous contents of the soil are annually augmented.

You will recollect that the root has no power to take up carbon, but it can take up carbonic acid; and therefore, it is a valuable property of a good soil that it should possess the materials for forming carbonic acid. Humus itself was at one time, supposed to be taken up, but Liebig has shown the fallacy of this; and now we know that soils which have a good deal of soluble extractive matter in them, or of humic acid, are often the very reverse of fertile.

Phosphoric Acid.—Phosphoric acid is given in all those cases where sulphuric and nitric acids are employed in Britain, and the Germans consider it a better tonic than the two latter. It is prescribed in its solid form in pills, but more frequently in its liquid state.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

Having mentioned the history of acute laryngitis, we now come to consider some features of the chronic form. I mentioned in my preliminary remarks yesterday, that its continuing in the chronic form usually denotes some structural change in the larynx, and this very circumstance implies, in some degree, an obstruction of the diseased organ. Chronic laryngitis sometimes begins with the acute disease, which is in a great degree, overcome, but there is some inflammation left behind. It usually, however, begins in a low form, and its attacks are very often associated with hoarseness and cough, and this, instead of passing off, as is the case with common cold continues troublesome and permanent. There is, at first, a general deficiency of expectoration, and a dryness in the throat. The hoarseness is accompanied throughout by a great want of secretion, and sometimes there is pain and soreness in the larynx, on pressing the larynx against the spine. There is also effusion around the *thyroid* cartilage, and there is tenderness, particularly between the *cricoid* and the *thyroid* cartilages. This is not always the case. Again, sometimes there is a difficulty in swallowing, and the act of swallowing is attended with pain. This is the case where there is disease in the posterior part of the larynx.

We must here consider the phenomena of hoarseness, of which there are a great many varieties. The commonest variety, consists in a deficiency of voice, a husky state of the voice, a simple hoarseness, which is not so serious a disease. The squeaking kind of voice, where the voice has lost its tone, implies a constriction, which consists generally in a thickening by inflammation; whereas the hoarse, or deeper tones of voice, or the loss of voice altogether, may be produced merely by a relaxed state of the membranes of the glottis. Thus you find that persons with nervous affections, particularly hysterical females, lose their voice suddenly. The squeaking kind of voice is a surer sign of serious and permanent obstruction from disease in the larynx, of which it is a physical sign. Sometimes this change of the voice is exhibited by persons who have some difficulty of articulation, or who often intentionally moderate their voice so as to speak more distinctly, and then the deficiency of voice is not perceived unless on excitement, or on their being asked to sing. Another character of this change of the voice in chronic laryngitis is, that it is not sudden, but it is progressive, gradually increasing. This is a great distinction between it and nervous affections. Cough, as I before said, is not constantly present, and when it is present, at first it is short and dry, and it is readily excited by exertion, or by exposure to cold air. In the progress of the disease, the cough sometimes changes its character, it becomes loose, accompanied by some expectoration; and, in some instances, a very peculiar kind of cough is heard, owing to the relaxation of the local membranes, or some other cause that prevents the closure of the glottis. Then you perceive one of the ordinary elements of cough, closure of the glottis, is not present. The expectoration is sometimes, particularly in the advanced stages, purulent; but the matter expectorated, arising from the larynx, is never a great deal. This is an important point in the diagnosis. You may find too, cases in which the patients have a complaint of the larynx, and it is treated as laryngitis. The expectoration in these cases is sometimes purulent, or sometimes it is streaked with blood; at other times there is a good deal of mucus with it, but the discharge of blood is seldom copious from the larynx itself. When the expectoration is removed the symptoms usually are relieved; there may be a relief of the constriction, and the hardness of the cough, but the voice may remain unaltered, which may imply the presence of an ulcer. In some few instances, besides the expectorations I have mentioned, fragments of the cartilages of the larynx are expectorated. The cartilages become ossified, and when the disease goes on for a length of time, it often happens that the inflammation loosens the cartilaginous matter, and little portions of it become separated, and are expectorated. Such a thing has happened as portions of cartilage falling backwards into the trachea, and causing fatal symptoms. Bodies falling into the trachea will cause acute bronchitis. Chronic laryngitis may prove fatal by the sudden supervention of œdema of the glottis; and the patient is sometimes worn down by the cough into a state of great weakness, and hectic fever arises from the disease of the larynx. I have never met with a case of chronic laryngitis terminating fatally, unaccompanied by disease of the lung. Some French writers have stated that the disease has terminated fatally without considerable disease of the lung; but in almost all the cases recorded by English writers, it is shewn that where the disease goes on so long as to affect the constitution, the lungs do not remain unaffected. Again, it is known that in phthisis, the larynx is very commonly affected. It has been stated that in more than forty cases of phthisis, there was ulcer in the larynx. I have mentioned before, that the acute disease is often caused by long continued catarrhal inflammation, especially in persons who, with husky voices, are continually indulging in spirituous liquors, and thus adding irritation to the cough. These are the persons in whom catarrhal disease in the first instance, gradually becomes deeper and deeper seated, until the structure becomes affected. Syphilis is a very serious and common cause of laryngitis, and the mercurial courses given during syphilis, must also be considered as a cause of this disease. Scrofula predisposes to this affection. It occurs more in scrofulous constitutions than in others; and it would seem that in disease of the larynx there is a disposition to thickening; sometimes there is tuberculous matter deposited in the submucous tissues, and this affords an explanation why the disease is often so intractable and so incurable, not only because phthisis supervenes, but because the chronic disease is added to the incurability of phthisis. I should observe, that whenever these products are produced they are not easily removed.

With regard to the morbid anatomy of this lesion, ulcers are often found situated, especially between the superior and inferior ligaments of the larynx, or under the surface of the epiglottis. The cartilages are often found encysted, and sometimes connected with the cricoid cartilages are fistulous ulcers, opening and discharging, from time to time, fœtid matter. The diagnosis is founded on the chief symptoms I have described, the loss of voice, the character of the cough, and the indications of pain and tenderness in the larynx. There is not much information to be obtained by an inspection of the fauces, for, in its chronic stage, the disease often has no effect on the fauces. In syphilitic cases, the disease almost always begins at the fauces, and extends downwards to the throat.

With regard to the prognosis, in the simple form of chronic laryngitis, accompanied merely with loss of voice or continued hoarseness, the disease is by no means incurable, but when it leads to suppuration and œdema of the glottis, it may be considered fatal. This should make us look with some suspicion on chronic laryngitis. Another cause of anxiety, too, is the liability of the affection to become complicated with pulmonary disease, for certainly there is a great liability in persons subject to chronic laryngitis, to chronic disease of the lung—phthisis, I mean. In fact, chronic laryngitis existing at all, is a sort of earnest that chronic disease may also come on in the lung. I mentioned this on the subject of general pathology in regard to chronic inflammation. It is a disease essentially connected with the state of the constitution, predisposing to the products I have mentioned, and whenever it is said that chronic inflammation may produce phthisical disease independently of a scrofulous constitution, we make use of wrong expressions. It is a modification of a scrofulous constitution, which means a predisposition to tubercle, and even in cases in which chronic inflammation is produced and kept up by perpetual exposure to cold, there may be a propensity to pulmonary disease; but under these circumstances the existence of pulmonary disease depends on other causes as well. Now, so long as the general health is kept up, and the disease is prevented becoming constitutional, the lungs may remain unaffected; but if an attack of fever comes on, and the hoarseness continues, and there is a deficiency of fresh air, then chronic disease manifests itself in the lungs, as well as other parts. Chronic disease is generally the result of a bad constitution that has not been sufficiently attended to. The state of the general health must be taken into account, in the prognosis; as long as the pulse is good, the strength good, and the nourishment of the system is well kept up, the prognosis is favourable; and if the chief excretory organs are in a sound state, there may be good hope of curing the disease, however severe it is, provided it be unaccompanied by disease of the cartilages; and even in cases where the cartilages have become diseased, there are abundant instances which go to prove that the disease may be retarded in its progress and the health restored. Among the local symptoms that are considered unfavorable, must be mentioned fœtor of the breath and the sputa; this implies more serious disease than mere ulceration.

Of the different particulars in regard to the treatment, there is one most essential to the removal of the disease, and that is to give the larynx as much rest as possible,—to abstain from any exertion of the voice. When there is aphonia, and the voice is destroyed, this direction is unnecessary; but when the voice is rendered merely hoarse, it is quite necessary, to give it the best chance of recovery, to confine the patient to speaking in a moderate whisper. So likewise protection from cold is very essential, and this may be done by regulating the temperature of the room to suit the necessity of the patient. It very rarely happens in regard to the medical treatment of chronic laryngitis, that blood-letting is necessary. Now and then a few leeches to remove the temporary congestion may be used, or sometimes in the early stages of the disease, a very few leeches repeated every two or three days. But much more good is to be obtained from counter-irritation on the sides and the back of the neck. This may be done by tartar-emetic ointment, or a blister kept perpetually open. Then to promote the removal of the lymph, nothing is so effectual as a mild course of mercury. Small doses, in the chronic form of the disease, are better employed than in the acute form, where active treatment is necessary. In the active treatment, calomel in doses of from five to ten grains, three or four times a day, with opium to modify its effect on the bowels, is better than corrosive sublimate. But in the chronic form of the disease, which I am now speaking of, mercury may be used much more effectively, a single grain of calomel given twice a day, with two or three grains of blue pill. I should state that where the disease reaches to the acute form, the sooner the mercurial treatment is employed the better. It has the effect of subduing the active inflammation, as in cases of syphilis, where mercury has not been used before. Now, in the more chronic cases, and where there is a more decided disease of the larynx, iodide of potassium may be given in a grain, or two or three grain doses, with sarsaparilla. In most instances, it is useful to combine some sedatives to allay the irritation of the cough, and the irritation of the larynx. They may be sometimes given internally; such as belladonna, and other things of that kind. Inhaling the vapour of hot water, or with various narcotic substances added, may be a beneficial mode of applying them. In common sorts of cough, this method promotes secretion, and in this way gives relief. The same thing may be done sometimes with hops, henbane, and the vapour of iodine, and chlorine. But where there is more permanent structural lesion, such as ulceration of the larynx, and where there is great expectoration having mucus in it, it is useful to employ remedies more directly calculated to relieve these symptoms, besides the inhalation I have mentioned.—There is a very simple method of doing this, and that is by applying a strong solution of nitrate of silver to the posterior part of the fauces, and introducing a little of it into the larynx. The thing has been done in this country in various ways, but the apparatus that seems best calculated

for it, is a sponge fixed at the end of a whalebone. This should be dipped in the solution, and passed into the mouth, until it touches the posterior part of the pharynx, which excites the act of deglutition, and then as the larynx is raised upwards, and just at that moment, the sponge is pushed forward and squeezed under the epiglottis, and if the operation is performed well a considerable quantity of the solution may be got into the larynx. The solution to be used for this purpose, should be pretty strong; one to two parts of nitrate of silver to four of water. The squeezing of this solution into the larynx causes very violent vomiting, and produces a very salutary effect. The mouth should be rinsed afterwards to remove any remains of the nitrate of silver, and prevent any injurious effects arising from it. In some serious cases, repeated applications of this treatment are required every day for five or six weeks. Some writers have recommended the inhalation of solid powders, by inspiring them through a tube. Nitrate of bismuth and calomel (particularly in syphilitic diseases) diluted with 12 parts of sugar may be used; also the red precipitate, sulphate of zinc, and sulphate of copper, but these require to be more diluted. The nitrate of silver is used in powder as well as in solution, with from 36 to 72 parts of sugar. This is used in œdematous inflammation of the larynx; once or twice a day. These diseases do not remain long, without the general health being somewhat injured, or being liable to injury; therefore, it is of great consequence to keep up the general health as much as possible by tonics. The patient should go into the open air if possible, and should resort to the sea-side. The diet should be plain and nourishing, not stimulant; wine and fermented liquors should be avoided.

Inflammation of the air tubes is the next subject, which we have to consider. This also is a deep seated inflammation, and is usually present in young persons in the form of croup. In catarrhal inflammation, the secretion is highly mucous, or if it is of a more albuminous character, then it is purulent matter, and sometimes it is fibrous. In laryngitis the same thing occurs, but there is external secretion of mucous or purulent matter: where there is internal secretion, depending on the deposit of something in the interstices of the membrane, it seems to have the effect of circumscribing the inflammation, and keeping it to one spot, whereas in laryngitis the disease is of a more phlegmonous nature. In young subjects, however, there is another form of inflammation. Young subjects are liable to catarrhal inflammations as well as adults, but they are not subject to laryngitis. At least, this is the general rule, though there may be some exceptional cases. The usual form is different. The common form of croup is, that the inflammation is albuminous, and the matter is thrown out externally, and forms a sort of pellicle, or membrane, lining the air tubes. But in cases of adults, a similar state is produced in persons of weakly habit, or where low fever has existed. In these cases, inflammation of the fauces is accompanied by the secretion of a sort of lymph. In croup, the inflammation seems to be submucous, but not to be intense enough to thicken the membrane, or circumscribe itself. Croup itself often begins with symptoms of a catarrh or cold, and comes on very rapidly. There is great heaviness of the eyes, and sometimes great discomfort. When the disease is more developed, then comes on that peculiar character of the respiration which gives to it the name of croup. It is first of all produced as a crowing of a peculiar croaking or hoarse kind, and by and by, a sort of croup is heard every time the patient coughs. It is not caused on the expulsion of the sputa only, but in the effort of coughing, and in the inspiratory effort too, this noise is produced. It is compared to the crowing of a young cock. Now, this may sometimes be remittent. It may come on, as many other catarrhal inflammations do, worse in the night. The crowing is not confined to the time of the cough only, but it causes a modification, sometimes, in the sound of the breathing; the sound being more ringing than usual. This is heard by auscultation, or by applying the ear to the throat. The respiration is more laboured, and the head is thrown back greatly. Under these circumstances there is an increase of the respiratory murmur in the chest, which is transmitted all over the chest, but it is much the loudest in its own proper seat. Sometimes, while the breathing is very laboured, a depression of the intercostal spaces takes place, as in laryngitis, showing the constriction that takes place at the orifice of the tubes. Sometimes there is an expectoration of mucus, with shreds of albuminous matter, and in a few cases, tuberculous moulds have been expectorated. Where this expectoration does take place, it is generally followed by relief. In the worse cases nothing of this kind is seen, the constriction continues, and the little patient, after struggling for breath for sometime, passes into a state of collapse; there is increased dyspnœa, lividity of the lips, weak pulse, and a cold skin. In this form of disease there are two varieties, sometimes a third; but the chief are the sthenic and the asthenic. In the sthenic variety, there is increased power of the muscular fibre, the veins, the heart, and the arteries; and in the asthenic, diminished power. There is, besides, the catarrhal variety, in which there may be a good deal of catarrhal inflammation, a spasmodic kind of croup occurring in the more nervous subjects, and the spasmodic exasperations are more intense than usual. A cause of croup is exposure to the east wind, a cause that prevails in phthisis. The morbid anatomy shews, in the first instance, some swelling of the submucous tissues of the larynx and the trachea, and the disease proves fatal very early indeed. If the disease goes on, the membranes are covered with an albuminous coating, which is most common in the asthenic form of the disease. This coating often extends to the bronchi, more particularly in the asthenic form; and there frequently is in asthenic croup, a complication of bronchitis with it, and asphyxia is present at the same time. What is the peculiar cause of the croup which is accompanied by effusion of albuminous matter? Some have ascribed it to age. In young children there is either a greater disposition to plastic inflammation, or a greater quantity of albuminous fluid. But if this be the case, it ought to be the common form of inflammation in young children; it ought to occur in bronchitis and catarrhal inflammations. But we find these occurring without any albuminous exudations. Then we may refer it merely to the peculiar seat of the inflammation. It reaches deep er by far than does catarrhal inflammation, and then the albuminous matter which is exuded, is usually exuded in deeper-seated inflammations, where the cellular texture becomes inflamed. It is deepseated in bronchitis, accompanied by an effusion of lymph. How is it that it is not retained within the texture in the same way as in adults? Why, there is a difference in the structure of the texture. The structure in young subjects is thinner; the membrane is loose, abounding more in mucous follicles than in older subjects; and further than that, there is an abundance of plastic material in the blood of young children. We find, in some cases, there is a sort of croup, or something like plastic bronchitis in adults, what may be called catarrhal inflammation, accompanied by an effusion of lymph and of albuminous matter.

The diagnosis is chiefly formed on the croupy character of the breathing and of the cough; and on the absence of signs of disease in the chest, there being no dullness on percussion in any part of the lung. The prognosis is extremely dangerous.—When the disease is more developed, and when it does not yield to the first treatment, it is hazardous in the extreme, particularly so, when the symptoms are not reduced by treatment. When that stage goes on to collapse, there is scarcely a possibility of recovery. One thing that increases the danger, is the small size of the trachea of children. If the patient is not a weakly child, blood-letting must be resorted to. Tartarised antimony, emetics, are to be given at the outset of the disease, and calomel and jalap are given with the same view. Dr. Cheyne recommends the combination of blood-letting with the emetic. In the second stage, tartar-emetic may still be given as long as the patient's strength allows it. Most practitioners in this country trust to calomel. It is more to be depended on than any other remedy, and does not exhaust so greatly.

A PLAN OF A MEDICAL REFORM BILL.

By WILLIAM SMITH, Esq., Surgeon, Bishopsgate Street.

Art. 1st.—That the College of Physicians, College of Surgeons, and Society of Apothecaries, and all other Schools, in London, shall be united into one Faculty of Medicine, by the name of the Faculty of Medicine of the University of London, —and that in Edinburgh, Dublin, and other places where different Colleges of Medicine exist, similar to those in London, they shall be united in the same manner, as Faculties under the names of their respective Universities. That these respective Faculties shall have the power of granting honorary degrees in medicine—such as the title of Doctor of Medicine, which title shall pre-suppose a competent theoretical knowledge of all the branches of medical science.

Art. 2nd. That neither of the Faculties shall allow any student to present himself for matriculation, before he shall have attained the age of 18 years; and that, previous to presenting himself, he shall have served an apprenticeship to a legally licensed medical practitioner in Great Britain or Ireland, or any portion of her Majesty's dominions beyond the seas, of not less than three years' duration; that, previous to matriculation, the faculty to which he applies shall examine him as to his proficiency in the various subjects of preliminary education, which shall be prescribed by the Supreme Medical Council; and in case of such student passing his examination with credit, he shall be allowed to matriculate his name as a Student of Medicine for the first time.

Art. 3rd.—That the system of education prescribed to the students, shall be the same in all the Faculties of Great Britain and Ireland, and that shall consist of not less than three years' apprenticeship to any legally licensed member of the profession, and not less than four years' study in one or other of the Faculties, before the student can be admitted to examination by the Professors of the Faculty for the honorary degree of Doctor of Medicine. That no student shall matriculate in any of the Faculties before he shall have finished his apprenticeship; but that during the period of his apprenticeship, he may pursue those those classical preliminary studies which are necessary to prepare him for undertaking the study of medicine with advantage.

Art. 4th.—That all the Faculties thus constituted in Great Britain and Ireland, shall have the power of granting only the honorary degree of Doctor of Medicine; which degree, however, shall confer upon the owner no privilege of practice, but simply shall be a permanent title, and a proof that the bearer is qualified to undergo examinations as a candidate for all the practical privileges of medicine.

Art. 5th.—That all Licentiates of the medical profession, from whatever Faculty they may obtain the honorary degree of Doctor of Medicine, shall possess, in addition, one definite and legal diploma,—which diploma alone shall give them permission to practice every branch of medical science, and to treat all diseases, of whatever character they may be, which affect the human body; as also it shall empower them to give advice, to buy, sell, manufacture, compound, and prescribe all sorts of drugs, medicines, and medicinal preparations, and shall give them a legal title to charge for the same in all parts of Great Britain and Ireland, as well as in each and all of her Majesty's possessions beyond the seas in any part of the world.

Art. 6th.—That in order to grant this qualification or diploma, a Supreme Medical Council shall be created in the following manner:—

The different Faculties in England shall collectively elect six members by ballot, to be presented to the Government in order that it may select three from amongst the six, which, thus selected, shall sit and form part of the Supreme Council; also, that six members shall be chosen by the Scotch Faculties, in a similar manner, and also six by the Irish, from which, Government shall in the same manner select three from each respective six,—and in this manner the Supreme Medical Council shall be composed of nine members.

Art. 7th.—That all Students of the Profession may, so soon as they shall receive the honorary degree of Doctor of Medicine from any of the Faculties, present themselves to be examined before the Supreme Medical Council, in order to obtain a practical diploma; and that, after they shall have passed their examinations successfully, and received the same, they shall be fully qualified to practice every branch of medical science. If, however, any one thus licensed shall wish to become a teacher of any branch of medicine, or shall wish to practice as a pure Surgeon or Physician (that is, to confine his practice to any particular class of diseases, without administering drugs or medicinal preparations) he shall again apply, after a period of not less than five years, to one or other of the Faculties. in order that he may be examined as to his proficiency in that particular branch, which he may wish to teach or practice; and if, on being examined, he shall be found fully competent, he shall receive the title of Professor of Medicine, in addition to his other degrees or quatifications.

Art, 8th. –That so soon as the title of Professor is attained, the candidate obtaining it shall be admitted a Member of the Faculty; and besides having the power of voting and debating in all matters concerning it, he shall be also competent to be elected to fill any Chair of the Faculties in any of the Universities, and may also be elected a Member of the Supreme Medical Council. That so soon, also, as the candidate shall have obtained the title of Professor, he may commence teaching that branch of medicine on which he has been examined, or any other which the Faculty may from time to time permit.

Art. 9th.—That all the examinations being thus passed, and the qualifications of Doctor of Medicine, Licentiate of Medicine, and Professor of Medicine, being in this manner attained, he shall have the power of electing, or being elected a candidate for any of the professorships in the faculty to which he belongs, or he may become a candidate for any professorship in ordinary in any of the faculties in Great Britain and Ireland, all of which elections, however, shall be confirmed by the Supreme Council, and in case of the votes for any two candidates being equal, the Supreme Council shall also vote and decide the claims by majority.

Art. 10th.—That the candidates for the Supreme Council to be presented to the Government for selection, shall be elected by ballot from amongst the Professors of Medicine, by all the members of the various faculties, and also by all Licentiates of Medicine residing within the limits of one of the three portions of the Empire, for which the six candidates having most votes shall be returned; but that no Licentiate shall have the power of voting until he shall have resided twelve months in England, Scotland, or Ireland, when such respective election shall take place; nor shall he lose the power of voting, once obtained in one of these divisions, until he shall have been twelve months absent from the same; also that no voter shall have the power of voting for any other candidates, than those standing for that division of the Empire in which he resides, or which he has not left for the period of twelve months.

Art. 11th.—That the Supreme Council thus constituted, shall have power over all the faculties of medicine in Great Britain and Ireland; which faculties shall not pass, or enforce, any bye-laws, until the same shall have been approved and confirmed by the Council. Likewise that the Supreme Council shall have power to consider and decide in all matters of dispute arising between faculties, or between individual members and a faculty, between Licentiates and a faculty, or between students and a faculty, either by direct interference, or when appeals are made to it by one or other of the aggrieved parties. Also that the Council shall have the power of electing and appointing all its own subordinates, by the law of majority; and also shall elect a president from amongst their own number; and in case of votes for any number of candidates being equal, the government shall decide by giving a casting vote.

Art. 12th.—That the Supreme Medical Council shall examine all candidates for a license to practice medicine,who shall present the degree of Doctor of Medicine, from any of the faculties of Great Britain or Ireland; and upon the candidates passing their examinations in a satisfactory manner,the Council shall present them respectively with the diploma of Licentiate in Medicine, containing all power of practising each and all of the various branches of medicine, according to the provisions of Article 5th.

Art. 13th.—That the members of the Supreme Council shall receive no portion of the fees of examination; but shall be paid by the Government—the sum of £700 per annum; while the President of the Council shall receive the sum of £1000 per annum.

Art. 14th.—That the fees for passing a preliminary examination before the faculty, in order that the individual may be matriculated as a student of medicine, shall be £1 sterling; half of which shall be paid to the Government by the faculty.—That the fees to be paid by the student to the faculty, for passing his examination, and receiving the degree of Doctor of Medicine from the said faculty, shall be £20 sterling; one half of which shall be paid to Government by the faculty..—That the fees to be paid by the candidate to the secretary of the Supreme Medical Council, for passing his examinations, and receiving the diploma of Licentiate of Medicine, shall be £20 sterling; which sum shall in *toto* be paid to the Government.—That the fees to be paid by the candidate to the faculty for passing his examinations, and receiving the degree of Professor of Medicine, shall be £20 sterling; one half of which shall be paid to the Government by the faculty.

Art. 15th.—That each of the faculties shall, for the benefit of the poor and meritorious portion of the public, annually grant 8 prizes to the 8 candidates best qualified in their preliminary studies, who shall enter their names as competitors for the said prizes.—That these prizes shall each consist of £2 per month for the period of 4 years, during which the student is prosecuting his medical studies.—That in addition he shall have permission of attending all the classes of his curriculum, free of expence, and shall be exempted from payment of all fees for examinations and degrees.—That in addition, the first, or highest prize, shall have £12; the second, £11; the third, £10; the fourth, £9; the fifth, £8; the sixth, £7; the seventh, £6; and the eighth, or lowest, £5, annually, to purchase books.

Art. 16th.—That the Supreme Medical Council shall have full power over the whole medical jurisprudence of Great Britain and Ireland, and all other of her Majesty's possessions beyond the seas, and shall prosecute and levy fines on the part of the Government without expence, and shall issue one pharmacopœia for the use of all the faculties, as well as all licentiates and students of the profession.

Art. 17th.—That no foreigner, whatever foreign licenses or degrees in medicine he may be possessed of, shall have permission to practice any branch of medical science, within any of her Majesty's dominions, until he shall have passed his examination before the Supreme Council, received the diploma of Licentiate in medicine, and paid the fees pertaining thereunto, or in lieu thereof, shall have procured a special license from the Government.

Art. 18th.—That no individual shall be permitted without the diploma of Licentiate in Medicine, to undertake the cure of any diseases affecting the human body, or to compound or sell any drugs or medicinal preparations included in the pharmacopæia of the Supreme Council, under the penalty of forfeiting £100. sterling, for each offence. In order, however, that wholesale druggists may enjoy all the advantages of commerce, they shall be permitted to sell drugs in any quantities, only to Licentiates in Medicine.

Art. 19th.—That no medicine shall be patented, nor its exclusive sale guaranteed to any person either in or out of the profession; and in order to compensate Government for the pecuniary loss thereby sustained, all druggists shall each pay annually, the sum of £200. to Government as an annual licence for permission and liberty to carry on their trade.

Art. 20th.—That all Licentiates in Medicine, practising as Licentiates or general practitioners, shall be paid for drugs, and value supplied for visits, according to the following scale for consultation and medicines furnished, as follows:—

	£.	s.	d.
For one consultation	0	6	8
For one visit within one mile of the practitioner's residence	0	6	8
For every mile of additional distance	0	1	0
For being engaged from 11 to 24 hours	4	4	0
For every medicinal mixture of from five to six ounces, containing not less than two doses, prescribed	0	2	6
For every draught prescribed	0	1	6
For every pill prescribed	0	0	1½
For every powder prescribed	0	0	9
For every ounce of ceretes, or ointments, or linaments, prescribed	0	0	6

That the professor of medicine, practising any one or more particular branches of medical science, without administering doses or medicines, shall, as at present with physicians and surgeons, have no legal fees.

Art. 21st.—That there shall be no faculty of medicine in any part of Great Britain or Ireland, or in any of her Majesty's dominions beyond the seas, having power to grant the degree of doctor of medicine, unless the chartered school or University instituting the same, shall have a professor in ordinary, teaching according to the rules of the supreme council for every distinct branch of the medical curriculum; and in consequence, that all those Universities in Great Britain and Ireland, with power by charter in the meantime to grant degrees in medicine or surgery, shall not be able to exercise that privilege, according to this article, until they shall have instituted such a Faculty as shall be deemed good and sufficient by the Supreme Medical Council. Further, be it enacted, that the law giving power to the Archbishop of Canterbury, to create Doctors in Medicine, be by this Article henceforth repealed.

Art. 22d.—That all students, Foreigners or natives, commencing or pursuing any portion of their medical studies at such Foreign Universities or Schools of Medicine that are duly authorised to teach Medical Science, by the respective Governments under which they exist, shall, on presenting sufficient proofs of the medical curriculum passed by them at such Universities or Schools, be admitted to pass their examinations either for honors or licence; but such proofs shall only be deemed valid, in so far as they shall correspond and conform to the regulations issued or approved by the Supreme Council. Also, that all Foreigners may have the privilege of prosecuting their studies in Great Britain or Ireland; the article of apprenticeship shall be dispensed with in their favour, provided that, although deemed fully competent by receiving the diploma of licentiate in medicine, they shall not have the privilege of practising the profession in any part of Great Britain or Ireland, or in any part of her Majesty's dominions beyond the seas.

Art. 23d.—That as soon as any licentiate shall have taken the degree of Professor of Medicine from any one of the Faculties of Great Britain or Ireland, he shall not be under the necessity, in case of his removal to any one or other of the three divisions of the empire, of passing other examinations in order to qualify him to become a member of a second or a third faculty, or in order to enable him to teach or practice any branch of the Medical Profession. But in case of such professor removing and wishing to become a member of a second or a third faculty, he shall, on producing his professors' degree and paying the sum of £20, be enrolled on the books of the faculty applied to as a member of the same; and the said member shall, in consequence, share all the honors and privileges pertaining thereunto, without prejudice to his honors or privileges elsewhere—excepting that he shall only be enabled to vote for the candidates of the Supreme Council in that portion of the empire in which he resides, according to the provisions of Art. 18th.

M. ROYER-COLLARD ON HYGIENE.

The title of the Memoir read at one of the recent sittings of the Academy of Medicine from which the following extracts are made, is "Hygienic Organoplasty, or Comparative Hygiene, or the means of artificially modifying the forms of living things by regimen."

The scope of scientific hygiene is not merely to preserve health and prevent the development of disease; it aims also at ameliorating and perfecting the various instruments of life, and at promoting the full development of all the powers of the system. By means of judicious management, we can either moderate or excite the vital powers, augment or diminish their energy, and modify in a variety of ways the form, the size, and the activity of the several parts of living bodies. We all know how much has been done in this respect as regards plants and many of the lower animals: may not the human frame, although more curiously and wonderfully formed, be susceptible of somewhat similar changes by a due education of all its powers and faculties?

Regimen.

"Under this term we include not merely the diet, but also the regulation of dress, of exposure to atmospheric changes, of the exercise of the moral and mental powers, and, lastly, of the functions of generation. As every part of the body, solid as well as fluid, is continually undergoing the processes of destruction and reparation, it is quite obvious that the substance or tissue of the different organs must materially depend upon the nature of the food that is taken into the stomach, and the powers of the system to assimilate it. Then, consider bow much we are all influenced by the conditions of the weather, by the heat or cold of the atmospbere, its dryness or moisture, by the state of its electricity, &c.! The influence of exercise is not less conspicuous than either of these; a due degree of it quickens all the powers of nutrition, promoting the development of every part, animating all their functions, and causing the muscular system more especially to be developed with unusual vigour. Then again, that the *breed*, so to speak, of any tribe of animals is not a little modified by certain conditions in respect of the process of generation, will be admitted by every one who has examined the question. The character of the offspring is as much influenced by the state of the parents' health, as that of the individual is by the other circumstances we have just been mentioning. And lastly, as to the moral influences, their nature is indeed different, but their operation on the health is not less indisputable."

Influence of Food on Plants and Insects.

"Anatomy and physiology have been indebted for the chief progress, which they have made during the present century, to the comparative study of man with the lower animals. Pathology has scarcely yet entered upon this field of enquiry; and bygiene is still further in arrears; although it, perhaps more than any other department of medical study, might derive the most important advantages from this pursuit. The practice of agriculture, the rearing of cattle, and the education of domestic animals have amassed a great treasure of the most interesting and instructive facts. But it is chiefly in the vegetable kingdom that the influence of cultivation is most conspicuous. What an innumerable number of varieties have often been obtained from a single species! Inert or even poisonous plants have been transformed into vehicles of nutritious food; small insignificant flowers into gorgeous heads of blossom; the sexual parts are converted into petals, leaves into fruit-buds, and roots into branches. *M. Liebig* tells us that the fineness of the Italian bonnet straw altogether depends upon cultivation, and adds that, "if the plant be supplied with carbonic acid and other matters which it requires, azote excepted, it will produce leaves but no grain, and sugar and fecula but no gluten." Modifications, scarcely less wonderful, have been observed to occur in the animal kingdom. *M. Dumeril* has communicated to me some interesting facts respecting the changes which different kinds of food produce in the size and form of some insects. For example, the sexual character in bees seems to depend in a great measure on their mode of living and on the food which is supplied to them. Among the larvæ destined to become the females, only some of them acquire the attributes of their sex; the others remain neuter. The former are lodged in cells that are larger, thicker, and very different from the rest; and thither the working bees bring a pulpy nutritious food, the colour and savour of which are quite peculiar. It is chiefly this alimentation that causes the developement of the generative organs in the queen or breeding bees. At the side of the cells occupied by them, are other cells occupied by other larvæ. Now these, without becoming precisely females, profit by their position; for they are generally larger than the strictly neuter bees, and moreover they afterwards produce a certain number of ova, the larvæ from which become the male insect. If by accident any of the female bees perish in the comb, the working bees forthwith set themselves to repair the loss; they enlarge the cells of two or three of the larvæ, and commence to bring them a supply of the *royal* nourishment: in this manner new females are provided for the supply of the hive. The knowledge of these circumstances has led physiologists to some most interesting discoveries. It has been found that we can at will change the female into neuter, and the neuter into female larvæ. Similar phenomena have been observed in ants."

Development arrested or Modified.

"In the higher classes of animals, our attention is drawn to the singular transformations which have been effected by artificial means in different animals while in the fœtal state. *M. Edwards* has succeeded in preventing tadpoles advancing to their complete development and becoming frogs, by depriving them of air and light: the animals continue to grow in size and strength, but still retain their fœtal form. In the case too of the eggs of the common fowl that are artificially hatched, it has been found that if the heat be applied unequally, monstrosities (which may be 'calculées d'avance') are the result: in one case big extremities with a minute head, and in another a small body with a very big head, may be induced. As we approach the human species, the changes that may be effected by domestication acquire additional interest. Need we do more than merely allude to the very wonderful difference in different races of dogs and horses?—all the results of breeding and education. Not less remarkable are the changes that have been made in the breeds of sheep and large cattle, by the labours of the farmer. The principles, on which all such changes have been effected, are on the one hand the judicious selection of the animals for breeding, and on the other, of the food with which they are provided. To such perfection are these matters understood in the present day, that the experienced farmer can at once tell you what sort of food the animal must be chiefly fed upon, according as the object may be to fatten it, or to increase the plumpness of the muscles, to promote the flow of the milk, or increase the growth of the wool or hair. The system has been applied even to some kinds of fish; for it has been found that, if they be castrated and then kept in damp soft moss, they will often acquire a most unusual size."

The Hygiene of Children.

"When we have studied successfully all the orders of the zoological scale, in the mechanism of their functions, and when we find that in each individual without exception there is constantly present the same physiological phenomenon, we may then with almost perfect confidence predict, that this phenomenon, will be observed in man also—who, although peculiar in his form and higher organisation, resembles other creatures in his general nature and in predominant characters of his system. We are thus led to draw some important hygienic instructions, from what we observe to take place in the case of the lower animals. How much of the future healthfulness of life depends upon the appropriate management, especially in respect of food, of the infant during the first twelve months! Most of the cases of rickets, and of deformities from other causes are directly traceable to imperfect or improper nutrition during this early period."

The Effects of Training.

"The effect of the *training*, to which pugilists, jockeys, and others submit in order to bring themselves into what is called *condition*, is truly remarkable. All the subcutaneous fat becomes quickly absorbed; the cellular tissue becomes firm and unyielding, so that any blood that is extravasated under the skin is circumscribed to a small space; the skin becomes smooth and clear; the muscles are unusually firm and prominent; the belly small; the chest full and well expanded; the general sensibility of the body very materially diminished; and the spirits are buoyant and elastic. It might be supposed that men, who had frequently submitted to the regime of training, would suffer for such effects in their health afterwards; but it would seem not; for many of the leading English boxers have lived to a green old age, and retained much of their early vigour to the last. Jockeys are certainly more unfortunate; but then with them, the great object is simply to diminish their weight, without any regard being paid to their muscular strength at the same time.

"In the case too of divers, we find that much of their skill depends upon the regimen to which they submit themselves. *Spalding* remarked, in his own case, that he always consumed the air in the diving-bell more rapidly, when he lived much on animal food, and drank malt or spirituous liquors. Whenever he wished to remain an unusually long time under water, he eat nothing but vegetable food, and confined himself to water only for his beverage. Divers, like runners, use various means to develop their respiratory energies, by the regulation of their diet and exercise; and some of them have attained truly wonderful power in this respect."

After some explanatory remarks on the nature of *training*, as resorted to by the various *athletæ* to whom we have alluded, our author makes the following reflections:—

"Nothing is more simple, and withal nothing is more physiologically skilful at the same time, than the regimen followed by these men. It is exactly the application of the famous Cyclic rule of the Methodists, related by Cœlius Aurelianus: 'recorporativis utendum viribus, ita ut, rejectis vitiosis carnibus ac renascentibus novis, reformata organa redeant ad sanitatem.' By purging away all offensive lodgements from the body, by bringing the skin into a soft smooth state by sweating, and by then supplying the system with plenty of wholesome nutritious food, as well as by the regular use of moderate exercise, can we at all wonder that the body should acquire greater energy and power of endurance? It is only surprising that medical men should always be so far behind in reaching the natural and right way, and be obliged to learn from men of no education, and who have derived their skill only from repeated observation of a few simple facts. From the preceding statements it is not difficult to perceive that some valuable therapeutic suggestions may be derived. Many of the various forms or degrees of health may be successfully modified by a systematic regimen, carried out for a certain length of time with judgment and perseverance; and there are not a few morbid states of the constitution that might be more benefited by such a simple means, than by all the elaborate prescriptions of the most wise and learned."—*Medico Chirurgical Review.*

Chloride of Palladium as a Test for Iodine.—Baumann has made some experiments on the comparative sensitiveness of an acid solution of the chloride of palladium and of the usual solution of nitrate of silver, and has found that one drop of the former produces a more voluminous precipitate than several drops of the latter in a solution of the iodide of potassium; and, further, that when the solution is diluted 50,000 times, nitrate of silver still causes a white turbidness, and chloride of palladium, after a few minutes, black flakes; the dark color of the precipitate with chloride of palladium renders it more easily perceptible. When diluted 500.000 times, neither of the solutions afforded any reaction.

EXTRACTS FROM FOREIGN JOURNALS.

For the 'Medical Times.'

Laxative effervescing mineral water.—Put into a quart bottle of spring water eight *grammes* of carbonate of magnesia, add at intervals a sufficient quantity of sulphuric acid of commerce to saturate the magnesia, leaving however a slight excess of the carbonate, after each addition of sulphuric acid. Cork the bottle, shake it, and then place it for some minutes in cold water. The effervescing water thus obtained is cheap, sparkling, and of a fresh and agreeable taste.

On the hygienic influence of climate in reference to the electric fluid—Cold and dry air acts as an isolating medium, damp air as a conductor, to electricity; to the first we refer the sanguineous temperament, to the second the lymphatic, while the bilious temperament is dependant on a hot and dry climate. The nervous and melancholic constitution is generally attributed to the hot and moist climate. The contact of the heterogeneous tissues, nerves and muscles, and which are all supplied by the arterial blood, serves to give rise in them to the two opposite states of electricity. The membranous system contributes to the preservation and the accumulation, as well as to the distribution, of electricity. The emission of the organic electric fluid takes place, 1st., in the functions of the nervous system; 2nd. in the chemical combinations formed in the body.—From the above remarks we may easily understand that the electric fluid is the probable cause of numerous diseases attributed to the variations and vices of the atmospheric constitution. Sometimes the atmosphere, surcharged with free electricity, imparts this fluid to the organism, and causes it to suffer; at other times a hot and anelectric atmosphere exciting the emission of the vital electricity, and rapidly absorbing this fluid, turns suddenly cold, becomes an isolating medium, and the organism being surcharged with its own electricity, suffers in like manner; we know also the results of an electric current and of sparks upon an organism. This electric physiology is of great use in furnishing *rational* indications of treatment:—in respect to a preservative treatment, 1st, by the use of isolating garments; (flannel, silk) 2d, by the change of climate;—in regard to a curative treatment, 1st, by diminishing the erethism of the blood, by means of bleeding; 2d, by withdrawing a part of the electric fluid by causing an increase in the serous secretion, as, for instance, by the application of a blister; 3d, by *watching* the sympathetic phenomena; 4th, by favouring the febrile crises (by tepid baths, diaphoretics, diuretics, emetics, drastics, quinine, electricity.)—*Annales Medico-Legales.*

Placentar Pregnancy.—M. Picrard has observed a case of placentar pregnancy attended with very remarkable symptoms. A fright, at the second month of gestation, appeared to have caused the death of the fœtus. The placenta remained adherent to the womb, becoming enlarged, without any other alteration. After some expulsive pains, of about an hour's duration, there escaped a large quantity of amniotic fluid, very fetid, of a whitish colour, and containing a granular substance; this evacuation was followed by the expulsion of the placenta. The absence of all trace of the fœtus proves that it may undergo putrefaction, and become dissolved in the amniotic fluid. The influence of mental disturbance upon the mother must play an important part in the *pathogeny* of the fœtus. Placentar pregnancy has perhaps caused the condemnation of many an innocent girl for the crime of infanticide.

Aneurism of the internal carotid artery.—M. Bigot gives the case of a Mme. Duhamel, aged 46, of a nervo-sanguineous temperament, who, after a fit of passion, experienced acute pain in the head, deeply seated in the part corresponding to the left eye; this pain was diminished under active treatment, although it never disappeared. Two years afterwards, when about to visit one of her friends, she suddenly felt an acute pain in the head, causing her to utter a shriek; ten minutes afterwards she was a corpse. At the autopsy, the internal carotid artery was found ruptured and gaping, in the midst of a swelling about the size of a small walnut. This enlargement was entirely composed of cellular membrane. The two other tunics were completely destroyed. M. Bigot attributes the rupture of the first membrane to the paroxysm of anger. Admitting the influence of this occasional cause, the author thinks that in this disease, as in almost all others, of an internal nature, a constitutional predisposing cause must exist, before the exciting cause is called into action. Marjolin says on this subject: "Some authors have thought that the long-continued use of mercurial preparations predisposes to aneurisms, by affecting the organs of circulation. It is more probable, according to the observations of Morgagni, Corvisart, Scarpa, and others, that the syphilitic virus exercises its action upon the coats of the arteries, softening them, and rendering them weak, or else producing ulcerations upon their structure; and that these various alterations are necessarily followed by the development of aneurismal tumours. Some practitioners think, and perhaps with reason, that herpetic, psoric, scrofulous, scorbutic, rheumatic and gouty affections, may also act upon the arteries, alter their texture, and thus predispose them to aneurism. I think that we must admit an aneurismal diathesis, whether we allow it to consist, either in the simultaneous, or in the successive development of serious organic lesions in various parts of the vascular system, produced by some internal cause."

Head-ache.—A man, named Frappez, 40 years of age, had for ten years been subject to violent headaches, which had resisted various kinds of treatment. A mercurial, or antisyphilitic, course gave him some relief, but the pain returned. The *iodurel of potassium*, then administered, removed this tormenting malady, which was probably owing to some syphilitic taint.

Constriction of the œsophagus.—A woman, 33 years of age, the mother of several children, had, for two years, been labouring under the following symptoms: pain in the gullet, on a level with the upper part of the sternum, becoming insupportable while taking nourishment; impossibility of swallowing solid food; frequent vomiting a short time after meals; stoppage of the menses for 3 months; constipation; progressive emaciation; sallow countenance; dry cough; febrile paroxysms towards evening; night-sweats. The patient was quickly cured by the administration of the *iodurel of potassium*, the dose at the commencement being ten grains in the course of the day.—(*Rul. Ogez.*)

Catalepsy.—A young and strong woman, aged 22, was subject to cataleptic paroxysms, sometimes as many as ten in the day, for which M. Crommelinck could find no assignable cause, affording any indication to the treatment, when by chance witnessing a paroxysm, the extreme dilatation of the pupils led him to suspect the existence of worms. On administering some doses of calomel and worm-powder, the expulsion of eighteen ascarides took place, and the disease disappeared.

Affection of the Spleen.—M. Fallot gives the case of a man, 20 years of age, of a weak constitution, and still more impoverished from a six months' confinement in prison and an obstinate attack of intermittent fever, who became affected with *splenocele* and *ascitis*. Under the influence of quinine, all these affections disappeared. M. Fallot repeats on this subject what he has several times asserted before namely: that the splenic tumours consecutive to intermittent fevers, generally speaking, give rise to no special curative indication, but almost always disappear together with the disease which gave them birth.

Extraordinary Case.—The same author relates the particulars of a soldier, who entered the hospital on the 6th of April for an incontinence of fœces. On the 14th the patient was attacked with lethargy alternating with the symptoms of encephalitis. On the 15th May, pulmonary emphysema showed itself;—at the commencement of June, symptoms of scurvy; towards the end of July, pleurisy and pneumo-thorax; on the 15th August, a gangrenous ulcer at the frœnum of the lower lip; on the 16th, death occurred, unaccompanied by any struggle or other remarkable symptom. *Autopsy.*—Atrophy and ramollissement of the brain; pulmonary cavern communicating with the pleural cavity; intestinal ulcerations, and mesenteric tubercles.

Epilepsy.—By the same. A man, named Beckman, 28 years of age, of an apopletic constitution, fell from his horse on the 20th June 1842, dislocated his shoulder, and received a considerable shock. Some hours afterwards he had an apopletic attack, which renewed itself on the 4th of October following. On the 10th of the same month he was seized with alarming convulsions, which terminated in death, after continuing for sixty hours, notwithstanding the employment of the most energetic means.—*Autopsy.* Ramollissement of a large surface of the brain; thickening and scirrhous degeneration of the *meninges*. This man had laboured under the venereal disease, to which M. Fallot attributes some influence in the production of the cerebral affection.

Homicidal Monomania.—M. Crommelinck admits two kinds of homicidal monomania—the *reasoning* and the *instinctive*. The latter species is of frequent occurrence in epileptic subjects. M. Crommelinck has arrived at the following conclusions on this point: epilepsy exerts a direct influence upon the functions of the brain. Every epileptic paroxysm is preceded or followed by an alteration in the action of the brain. This altered action is of longer or shorter duration, in proportion to the more or less frequent recurrence of the paroxysms. This state of the brain may give rise in the patient to every species and every possible degree of mental alienation. Epilepsy, when long continued, invariably terminates by annihilating the functions of the brain.

Cerebral Amaurosis.—M. Compérat gives the case of a young widow, 22 year old, of a sanguineo-bilious temperament, who menstruated at 11 years of age, and who at 12 experienced a great fright, in consequence of which she was immediately attacked with a violent fit of epilepsy which lasted some hours, and which was succeeded by a sleep of 12 or 15 hours duration. Since that period, every month, on the same day and at the same hour, a similar attack showed itself. Becoming pregnant at 15 years of age, these attacks became less frequent, recurring every five or six months only. In the month of February, 1841, after a miscarriage, she experienced violent pains in the head which disappeared on the occurrence of menstruation. On the 25th of April, however, these pains returned, and on the 10th of May, on waking in the morning, she found that the sight of her left eye was lost. The eye presented no material alteration; there was some little intolerance of light; slight pain over the orbit; insensibility to light; and pupil moveable. Both eyes were of a palish red colour. During ten consecutive months, this young female was subjected to the action of 180 hip-baths, 200 mustard pediluvia, 300 drastic pills, 12 or 15 emetics, 80 blisters upon the forehead and temples, 1 seton in the neck, 7 bleedings, 180 leeches, and 220 applications of the large cupping-glasses to the limbs. The disease left her, and the sight returned. M. Comperat then makes a remark (with which but few of our readers can agree), namely, that it matters but little which of these means was successful.—The patient was cured, and that, he says, is all that was essential.

Phlegmasia dolens.—It is not always the vein which is affected in this disease; sometimes the lymphatic vessels, and at other times the cellular tissue alone, are the seat of the malady. When the vein is affected, a clot is formed, then a *kyst* around the clot, and pus in the *kyst*; this disease is less grave in proportion as the period of accouchement is more distant. The swelling takes place from above downwards, because the inferior radicles of the veins find anastomoses so as to keep up the course of the venous blood for a longer or shorter period. The clot may be re-absorbed, and the circulation become re-established; if the clot becomes organised, the vein remains completely obliterated. A woman having been bled twice in the right arm for a rheumatic attack, the vein inflamed, suppurated, and the symptoms of purulent reabsorption showed themselves: shiverings, fever, dry tongue, delirium, metastatic abscesses, &c. She was cured by the sulphate of quinine.

Pneumonia.—Chill, says M. Chomel, is not always the only cause, nor even the principal one, of pneumonia. We must necessarily admit a predisposition

which the chill calls into action. Cold in this circumstance is but the *exciting* cause acting on a pre-existing morbid state. Shivering is an almost constant *initial* phenomenon in pulmonary inflammation. It may occur, also, at the commencement of other affections; but these are exceptions.—In pleuro-pneumonia, pain ordinarily presents itself in the region of the breast, although the point of the inflamed lung does not correspond to this region, or extends much beyond it. The cause of this phenomenon is, however, unknown.

Puerperal metro-peritonitis.—The following were the symptoms presented at the *autopsy* of a woman who died of this disease under the care of M. Chomel, at the *Hotel-Dieu.* "The uterus presented nothing anormal, but it contained the *debris* of the placenta, and clots of blood surrounded by an extremely fetid and sanious liquid. In the broad ligament, there was a cavity of the size of an almond, filled with purulent matter. The intestines were covered with false membranes,—and, in the peritoneal cavity, there was found a large quantity of pus." Whether the disease results from epidemic infection, or depends on the presence of milk in the blood, or of putrid matters in the uterine cavity, the most sure and speedy means of cure are those which act by stimulating the secretions; chlorine and the sulphate of quinine are sometimes useful.—(*Gaz. des Hopitaux.*)

Carbonate of Ammonia in Scarlatina.—Dr. Ricken cites a number of cases to prove the efficacy of carbonate of ammonia in the above disease. This agent he considers as almost specific.

Arsenic in Bread.—Some persons, at Soignies, having shown symptoms of illness which were attributed to the bad quality of the bread, a chemical analysis was made, which led to the discovery of a quantity of arsenic sufficient to account for the phenomena observed.

Test for arsenic.—Acidulate the arsenical liquors with hydro-chloric acid; boil them with some metallic copper, which then becomes covered with a coat of an iron-grey colour. The precipitation of the arsenic by this means is so complete, that Marsh's apparatus shows no further trace of it in the liquor.—*Journal de Phys. et de Chimie.*

Affection of the neck of the Uterus.—M. Jobert gives the name of dropsy of the neck of the uterus to a swelling of this organ, which he has observed in lymphatic women, attended with irregularity in the menstruation, and which he has cured by making, in the direction of the commissures, a sufficient number of incisions to allow the escape of a ropy fluid, and thus reduce the enlargement of the neck.

Amaurosis.—A child, of good constitution, 12 years old, had been affected with *hordeolum* on the left upper eye-lid, and at the same time, every thing presented to the eye of that side appeared of a green colour. No other remarkable symptoms occurred, beyond frequent pains in the head, which, however, were not very intense. By excluding the eyes for fifteen days from the action of the light, and making the patient wear green glasses, the functions of the eye were restored to their integrity. The same symptoms, however, soon recurred, followed by complete blindness. The patient complained of pain above and below the orbit. Leeching removed the pain, and blisters and purgatives restored the sight.—*M. Guersant. Gaz. des Hopitaux.*

Erectile tumour of the face.—A little child, 13 months old, was brought to M. Pigeau with an erectile tumour, three *centimetres* in diameter and one *centimetre* in thickness, seated over the left eye-brow. Nine punctures were made on the surface of the tumour with a lancet armed with vaccine matter; the tumour shortly disappeared. —*Experience*

The Fluid of Ranula.—M. Gmelin says that this is quite different from saliva, contains no sulphocyanate, only a small proportion of salivin, but principally albumen. The albumen amounts, however, to but two per cent., although the fluid is of as thick consistence as others which contain 5 per cent. Hence, it is supposed, that it contains some peculiar matter to which its thickness is due, or that the albumen is of a peculiar nature.

TO CORRESPONDENTS.

Answers to our various Correspondents are unavoidably postponed until our next number. Mr. Clendon and others *next week.*

THE MEDICAL TIMES.

Saturday, May 20, 1843.

" Facilis descensus Averni
Sed revocare gradum, etc.,—hoc opus."

Inasmuch as the intellectual and moral character of the medical profession is not confined, as far as its influence is concerned, to the Esculapian circle alone, but branches far and wide into all the spreading ramifications of society, we feel it our duty to caution not only the profession but the public against every manifestation of quackery, never mind whether it emanate from those whose professional titles have been made and given by the ancient and constituted authorities, or whether it come from some of the more distinguished of those who make titles for themselves.

Within the last two or three years, some of our provincial towns have been peculiarly distinguished by the activity of their medical press,—the character of the productions, however, of this redoubtable activity, is better known to those who dwell in the respective localities than to their friends at all in the distance.

By way of illustration we give the following as a select and highly illustrative specimen of the Liverpool talent, in the department to which we allude. We hope that our readers will give it their best attention, and that henceforth they will be on the alert with regard to the characteristics of medical enterprise and medical progress, which so much distinguish the second town of the British dominions.

To Families desiring a Diminution of the Expences of Medical Attendance with Perfect Security in the Preparation of Medicines.—Without dwelling upon the advantages which are sufficiently obvious of a Physicians compounding the Medicines he himself prescribes. Doctor Hickson, Graduate in Medicine, Trinity College, Dublin, Surgeon, Accoucheur, &c., solicits attention to the Pharmaceutical Arrangements he has made for supplying, not only to his own patients but to the public generally, pure and un-adulterated medicines, exempt in their preparation from the risks ant objections so much complained of. Resting his pretensions on his qualifications and acquaintance with the treatment of diseases, and on his determination and ability of securing to his patients so important a saving (by affording, of himself, all the requisite aid of a physician and accoucheur, with appropriate and correctly prepared medicines,) as must ensure the approbation of all classes, Doctor Hickson enters into no invidious comparison between those of others and his own establishment, which is purely Medical and similar to what is kept by the General Medical Practitioners of London and Dublin, who, while they afford to persons requiring them opportunities for obtaining the purest medicines, and having prescriptions safely dispensed, consider the sale of paints, colours, dye-stuffs and deleterious substances, not used in recipes, together with the miscellaneous articles unconnected with medicine vended by chemists and druggists if not dangerous, certainly incompatible with their duties, as physicians and surgeons. The demand for domestic remedies becoming every day more general, Dr. Hickson, will, together with Patent Medicines, of established character, be constantly supplied with several useful preparations, among which will be found a compound Syrup of Iceland Moss, much approved of by many families, as a safe, palatable, and valuable cough remedy, a compound Syrup of Sarsaparilla, a highly concentrated and efficient preparation of that medicine, female Aperient Antibilious Pills, constructed on due consideration of the peculiarities of the constitution of females, and their diseases,—Aperient Antibilious Pills, adapted to both sexes, &c. &c.—The poor, attending at Dr. Hicksons, will be prescribed for, and left at liberty to procure medicines where they like.—21, Upper Hill Street, Toxteth Park.

We cannot help admiring the general appearance of the advertisement here given; its aspect is genuine, it is Liverpool, it is mercantile, and most likely the production of a man who has a right good knowledge of the ways of the world,—indeed so perfect is it in this point of view, that we should do its author an obvious injustice were we to suppose that his life and energies have been wholly devoted to the medical profession, or even to the medical art;—the most important touches are upon what our Liverpool friend calls the drysaltery business, and the paint and oil and colour trade,—and read in truth, as if they had been written by a man of experience, who has just finished his Saturday's manuscript circular, has sent half a dozen by his office boy to the Post, and, in his arm chair, regretting the smallness of the profits of the week, determines to eke them out by the popular practice of Physic. We may be thought to take a somewhat strange view of the matter—but it appears to us, that the notice of the Drysaltery is of such a cast, as to induce us to think that it forms the main part of the trade.

The art of deceiving by advertisement, is a curious, a protean pursuit;—like the Cameleon, it takes a new-colour in the hand of every possessor, and thus deceives all, while each assures himself, that he scrutinizes it with care—that he judges it right. Indeed each social class requires, we were about to say, demands the deception,—the imposition, which meets its moral and intellectual state, and the man who rejects with disdain a small attempt made by a modest hand-bill of four inches square presented at the corner of the street, or strewed on the highways and hedges, would receive as a charm, and cherish as a friend,—any lauded "*system*" (mark the name) introduced to his notice as the discovery of a foreigner, more especially, if the latter could claim a fortunate connexion with the so called "land of thought," with Austria's dominion, the far famed home of Kant.

The difficulties to be contended with by the junior members of the medical profession, are unquestionably very great, and the "res angusta domi" which not unfrequently bites so keenly mid this section of the

faculty—tends more or less to sharpen the cunning, and arouse the quiet intellect,—and in this way it would seem that many become positive inventors of "systems," who might without such goad, have been mere passive dreamers of dreams: the application of such remarks to England might be doubted;—that their truth might be discovered, if directed to Germany, most of our readers would readily acknowledge. There is, however, a curious difference between the English and the German modes of proceeding, in much that relates to the formation and the spread of this kind of medical fame; perhaps the difference will be found to be in favour of the German plan,—for the English *aspirant* who tries the little placard, or makes the small newspaper effort, hopes as is evident, that his reward will soon arrive, otherwise the proceeding would have to be changed, as surely as that of Mechi would be, if he never sold his strops; all his calculations are small in time, and space, however great they may be in specie; not so the German—whose scheme has more of philosophic greatness, and is prepared with such mystery, and put forth with such array, as inevitably tends to make even those who are but little curious or concerned to inquire respecting its author. Are we too extravagant in saying that the one reminds us of a charlatan of the ordinary cast, praising his nostrums from the elevation of a cart, thus duping the small multitude of a Dutch fair, while the other rather brings to our recollection, the mystic scheme of the Prophet, the character, and contrivances of Mahomet, throwing even the alchemists into the shade; his visit to the cave, his study in its gloom, the inspiration he received from the angel,—and more than all, the authority he gained by the whole,—thence coming forth like Minerva from the brain of Jupiter, full armed, with the perfect law, the system he bore;—so the German system-maker of modern times, calculates well the materials he has to work upon, and the energies he has to work with, sees the prospect of success, and retires to prepare the spell; which even should it have nothing in it beyond a message respecting the manner of drinking water to excess, and of bathing "*ad libitum*," must have cost the author years of retirement and toil, of conscientious doubts, and philosophic hesitation,—the surrounding country from time to time being warned of the revelation which approaches, and of the power with which it is to be winged. Here we are reminded of the soaring propensity of Greek words, and of the flight they take as system bearers from Germany: the water cure is little and low when compared with *Hydropathy*;—the difficulty of clearly explaining the word *Homœopathy*, in connection with its present application, renders it entirely superior as a scientific vehicle to any common expression that might be framed from our vernacular tongues. The Medical Sectarians of Germany, like the religious Sectarians of Britain, must have a name for their system, even though they should be styled jumpers or latter-day saints, and their philosophy receive a corresponding appellation.

This "Charlataneria Eruditorum" of such workers on the great scale, surpasses far in effect all the minor productions of British genius, its influence spreads far and wide,—it is received, cherished, adopted, its name being first carefully spelled, and its meaning, should it have any, studied, and that there is much in such name we will not attempt to prove; patients may be obtained by a system which has no name,—but let the man who seeks fame take a long one—a Greek one,—travel much from place to place, but never visit the same city twice within the same seven years.

Believing as we do that Homœopathy is good as a placebo, and especially that it supplies a safe remedy where there is no disease, and that the name Hydropathy instead of the name *Father Matthew*, might do much good in England, if fully and properly understood; we nevertheless wish to caution some of our junior readers against the cajoling pretensions of these new sciences, the length of whose names so prettily contrasts with the littleness of ought which they signify.

Men receive a character from their medical as they do from their theological creed; but it is less easy to mask the medical face, than to keep the true moral countenance out of view; hence we say, beware of false prophets in medicine, be slow to suppose that all medical rationalism has been given to one man; or on the other hand, that any "system" should be so elevated as a masterpiece of quackery, that it has not one common-sense characteristic to let tt down. We have known a few instances of comparatively young doctors who got into practice as was *said*, by Homœopathy; but we have remarked, that they got out of it much faster than they got in.

To dispel the darkness, we should let in the light; and if the men and institutions of this country, from whom scientific efforts might fairly be expected, would do a little more in their respective localities to raise the scientific character of the Medical Profession, we should have less of such parvum-in-multo discoveries, and of the systems which come from afar;—then indeed, the Drysaltery business would be so far removed from any thing relating to medicine, that the "discerning Public" of Liverpool need no longer be cautioned about the dangerous proximity of the two, and the Doctor, before noticed, would carry on his trade undisturbed, never mind to which class of the mercantile community he may belong.

MEMORANDA ON SUPPURATION.

The phenomena of the process of suppuration have been lately attracting much notice among many of the French pathologists. Two of the ablest enquirers are M. *Darcet* and M. *Conte*, both of whom have published very interesting memoirs on the subject. The former of these gentlemen has pointed out with great accuracy the changes which purulent matter undergoes on exposure to atmospheric air, and has deduced from his observations on this subject some ingenious conclusions touching the development of what have been called consecutive or metastatic abscesses.

If pus, he says, be exposed to oxygen, it soon separates into two parts—one nearly solid and membraniform, the other a sanious liquid of a dark colour and which gives off carbonic acid. If the action of the gas be continued, this liquid quickly putrifies, and emits a strong ammoniacal odour; the membranous portion remains nearly unchanged. When the former is injected into the veins of an animal, all the symptoms of an adynamic purulent infection of the system speedily make their appearance: the whole of the circulating mass becomes more or less completely vitiated. The poisonous action, which goes on "de proche à proche," is compared by M. *Darcet* to that of a leaven in a fermentable fluid.

When purulent deposits are absorbed, without giving rise to any constitutional disturbance, our author is of opinion that the matter is carried off by the kidneys; for the urine in such cases will be usually found to be more or less charged with albumen, as M. *Martin Solon* has observed to be the case at the period of the pustular desiccation in small-pox. Now, as there is albumen in the liquid portion of purulent matter, we may naturally suppose that this element has passed with the serosity into the urinary secretion. The semi-solid membraniform portion remains, he thinks, behind in the seat of the abscess, and may afterwards be recognised, at least in some cases, as a yellow amorphous adipocire-like substance, such as *Dupuytren* and some other pathologists have observed in various organs, and especially in the brain. M. *Darcet* has several times inclosed some purulent matter in a permeable bag, and then placed this among an absorbent powder; the fluid portion of the pus soon disappeared, and nothing was left behind but the solid membranous portion of which we have been speaking.

M. *Conte*, in his essay, has entered at some length into the history of *pyology*. It is often very useful in medical literature to look back upon what our distinguished predecessors have done; for really they seem to have been more assiduous, and certainly more unprejudiced, observers of the phenomena of nature than their more boastful children. Let us follow M. *Conte* in a few of his remarks.

Pringle, he says, has observed that the serosity of the blood, if exposed for some time to the temperature of the animal body, becomes turbid long before there is any appearance of putrescency, and deposits a white sediment not unlike to pus: he therefore concluded that it (pus) is derived from the watery portion of the blood. *Van Swieten* remarked that purulent matter exudes in a serous form; and *Nicholas Romagne*, in his thesis published at Edinburgh, distinctly maintained that it is from the serum of the blood alone that pus is formed. We know also that *John Hunter* and Sir *E. Home*—although their opinion was that pus is a secretion from the entire blood, and not merely from one part of it—have stated that, if we carefully prevent the pus from remaining on the surface of an ulcer by continually wiping it off, nothing but a transparent limpid serum is then secreted.

Would it be unreasonable to conjecture that purulent matter becomes acid in a few moments after being secreted, and that thereby its albumen becomes precipitated? This idea may appear very fanciful to many surgeons, who are but little conversant with the nature and results of chemical action; but let them remember that it may be with pus as it is with urine, which every one knows is quite tr nsparent when voided, but may become thick and muddy almost immediately afterwards.

It is very possible that electricity may have something to do with the change. *Majendie* remarks, in his Treatise on Physiology, that "the action of the galvanic pile coagulates serum, and causes the developement in it of globules which are very analogous with those of the blood."

We know that an abscess contains at first nothing but serum; subsequently there is a thin puriform fluid, like skimmed milk, and at length a thick and opaque pus (*Burdach*.) The same succession of phenomena is observed in the successive changes of the contents of a variolous pustule. May we not recognise in such facts as these a process altogether

similar to that observed by *Hunter* and *Home* in ulcers, and also on the surface of mucous and serous membranes?

Let us now see whether chemistry affords any confirmation of these views.

In M. *Andral's* work on Pathological Anatomy, we meet with the following passage:—"Pus has been analysed by many chemists. *Schwilgue* found that it was composed of albumen, in a peculiar condition, of extractive, of a fatty matter, and of various saline substances. According to this analysis, pus would seem to differ from the serum of the blood only by the peculiar state in which the albumen exists, and also by the presence of extractive matter. The nature of this last substance has not been well ascertained: some regarding it as an animal matter, not analogous to anything existing in the healthy body; while others view it as a mixture of albumen and fibrine, or as fibrine which has become spontaneously incoagulable and inorganisable. According to *Pearson*, it is an animal oxyde: according to others, it is of a cheesy character."

M. *Gendrin*, who has written so largely and elaborately on inflammation and its consequences, writes thus on the question under consideration:—"It seems to result from all our observations that laudable pus is composed of soluble albumen in small quantity, and of albumen united with fibrine: it is the union of these two substances that constitutes the pulverulent matter which is precipitated in water."

M. *Donne* is of opinion that the precipitate consists of albumen coagulated by muriatic acid—which, according to him, is always generated during inflammatory action

While all authors are agreed as to the presence of albumen in pus, there is no little difference of opinion as to the existence or non-existence of fibrine in it. Many writers distinctly deny that it is present at all; and even those who believe otherwise are forced to admit that it exists in a peculiarly modified condition, which gives it the appearance and somewhat of the character of cheesy matter. Does not this very circumstance of the fibrine—if, indeed, there be any at all present—being in an essentially altered state, confirm in some degree the idea that pus is derived mainly or entirely from the serum of the blood?

Supposing that the truth of this be admitted, the question now presents itself—in what manner does the serum become transformed into purulent matter?

Dr. *Conte* suggests the following explanation:—"It is admitted that, during the process of inflammation, the course of the globules of blood becomes slackened at first, and is afterwards completely arrested, so that they remain stagnant and obstruct the minute capillaries. In this state of things it may happen that the serosity of the blood. being the thinnest and most liquid portion, impelled by the *vis a tergo*, is still able to traverse (at least partially) the obstructed vessels, and then exudes from them, possessed of those properties which *Hunter* has so faithfully described.

If from the violence of the inflammatory action the life of the part be destroyed, the process of putrefaction quickly begins, the capillary vessels gorged with the blood-gobules burst and allow the globules, along with the decomposed serosity, to escape; in this manner we may explain the formation of the brown coloured and turbid sanies which flow from a part affected with gangrene."—*Medico-Chirurgical Review.*

PENCILLINGS OF NON-MEDICAL MEN.

MR. CARTWRIGHT, DENTIST.

In our series of sketches of the medical profession, we do not intend to confine ourselves solely to what may be termed the legitimate professors of the art, but to give portraitures of persons in all the various branches of medicine. Many of these—such as cuppers, corn-cutters, tooth-drawers. &c, are, indeed, but little qualified to "point a moral," and, truth to say, it would be just as difficult to extract from them any ornament for a tale. Others, again, as in the present instance, have no right at all to be classed in the ranks of the medical profession, inasmuch as they have graduated in no college known to mortal man, but have received their diplomas, and their rank as medical men, exclusively from themselves. But still, they exercise such an important influence on the persons, or at least the purses, of the public, that we cannot allow them to remain wholly in that obscurity which is their natural element; especially as, with the exception of the press, there exists no power for keeping such *gentry* in order. We select the person whose name stands at the head of this article to begin with, as he has contrived to gain a name second only to Dr. Solomons and "the Great Wizard of the North" (the Adelphi one we mean) himself; and each month we shall present our readers with a sketch of some similar worthy, until the public shall be familiar with their virtues.

Mr. Cartwright, though exceedingly aristocratic in his associations now (or, at least, ambitious of having the world think so), is a man of very low birth; but we find no fault with a man for being mean in his origin, if he is not also mean in his actions. It is the fashion to object to Sir Robert Peel that he never had a grandfather; but we question whether the illustrious object of our sketch was ever acquainted with a relation who is universally admitted to stand in a nearer degree of propinquity. In other words, we are so ignorant of the history of his respected parent, that, we fear, its elucidation must be abandoned until the genealogy of Homer is cleared up. That he had such a relative, or rather antecedent, is undoubted, otherwise we should not have found himself, in the 21st or 22nd year of his age, settled as an ivory-turner, on a small scale, in a court off Holborn, and carrying on a brisk trade in children's rings, rattles, toys, and egg spoons.

The fabrication of horse-bone rings, to assist children in cutting teeth, was, in an enterprising genius, but a natural preliminary to the extraction of these organs when they again become troublesome, and to the substitution of sham grinders for those thus removed. Mr. Cartwright accordingly combined the trade of a tooth-drawer and a tooth-maker, with that of a bone-turner; but it was in the last named "line" (to use an elegant expression) that his business was briskest, and in that "line" he might have remained till this day, peradventure, however, attaining the rank of "manufacturer of rings to assist children in cutting their teeth to his late most gracious Majesty William the Fourth," (a titulary distinction which a worthy brother-professional in Drury Lane monopolizes,) but for a lucky accident which occurred in the vicinity of his door. "It's an ill wind," says the proverb, "that blows well for nobody;" and assuredly it was no ill wind for Mr. Cartwright which overturned a lady's carriage at the extremity of his court, and so disabled her that she was carried into the nearest shop, which chanced to be his, for assistance. Good luck, as well as bad luck, never comes alone. The lady was so injured, it is said, as to be unable to leave the place for several days; and partly by aid of her money, partly by dint of her good will, the lucky ivory-turner shortly afterwards abandoned his court and his original trade, and made his appearance in a fashionable quarter of the town under the imposing designation of a *Surgeon*-dentist, though from what college he received his medical rank history sayeth not.

The patronage of the lady, however, would have been inadeqnate to introduce Mr. Cartwright into practice, but for the exertions of an ingenious domestic, named John, who, we regret to find, by the Old Bailey reports, was, some years ago, dispatched by an ungrateful master to Botany Bay, at the especial care and cost of the country. It was John's custom, whenever any rare patient straggled in upon his master, to allege that so many were enamoured of Mr. C.'s mode of drawing teeth, that at least a score were struggling in the next room for the pleasure of precedence; and after the patient had been thus duly "beflummered," the master himself would make his appearance, tablets in hand, and running over the names of half the peerage with whom he had formed imaginary engagements for the next six weeks, would, as an especial favour, consent to see John Nokes, or Mrs. Stokes for three minutes, "between the Marquis of A. and the Duchess of B." To this species of flattery the families of the Nokes's and Stokes's—comprising three-fourths of the cockney population—have always been remarkably sensitive. The hoax was accordingly swallowed, and each simpleton telling his friends and acquaintances, "Bless me what a practice that man Cartwright has, but, as a particular favour, he consented to attend me before a Duke and a Duchess," of course sent other persons to be in like manner humbugged.

Another secret of Cartwright's success was the ingenuity with which he contrived to render the *Clacquers* of the Opera and music saloons a sort of walking advertisements. We know not whether he was author of the bright idea of sticking a man between two boards, intimating that "Teeth were cheapest drawn, &c.," by Mr. So-and so, of such a street, but he hit on a plan equally effectual, by drawing all the small fry we have alluded to once a week to his house, and they were expected to act as itinerant puffers during six days, in return for the entertainment they received on the seventh. Mr. Cartwright made a similar attempt upon the press, and we remember the first number of "Bentley's Miscellany" came out with a flagrant puff of him, but for the honour of literature, we feel a pride in saying that no other person belonging to it has been so degraded.

The practice which Mr. Cartwright has thus acquired is great, and the fees he obtains enormous; but his gains would seem to be no exception to the proverb "come lightly, go lightly."

In person, Mr. Cartwright is a dull, demure-looking man, about sixty years of age, with no feature which one could recollect for a moment after quitting his presence. Some person seems to have translated, for his benefit, the saying—"*Vir sapit qui pauca loquitur*" (he is a wise man who holds his tongue); and, by dint of taciturnity, he may possibly acquire credit for wisdom. He, of course, has never written on the subject of his profession. His literary exertions are confined to make out his bills and signing receipts; but it is not true that he signs his name with a mark.

PHILO-PROBE.

ANALYSIS OF THE MINERAL SPRING AT BAGNERES.—Messrs. Boullay and Henry have recently analysed and experimented on the Angouleme or mineral spring at Bagneres de Bigorre, and have found that 1000 scruples contain as follows:—pure water, 999.9515; carbonic acid, muriate of magnesia, muriate of soda, carbonate of soda, carbonate or muriate of potash, 0.0194; sulphate of soda, sulphate of lime, silica and alumen, 0.0141; earthy carbonates, 0.0097; crenate of iron, 0.0053. The water of the Angouleme spring contains, therefore, a very small proportion of salts, and is but slightly ferruginous. It is, nevertheless, a very valuable, and exceedingly serviceable spring.

DENTAL QUACKERY.

(To the Editor of the "Medical Times.")

"Quacks high and low, whate'er your occupation,
I hate ye all! but ye remorseless crew
Who with your nostrums thin the population,
A more especial hate I bear towards you."
MAUNDERS.

SIR,—In the letter of last week, which you did me the honour of inserting in your valuable columns, I exposed a little of the unblushing effrontery, the barefaced impudence of some of our advertising quacks—and a few of their Proteus-like changes of cognomens, and more than Ovidian metamorphoses. But, in truth, I might fill your Journal with such edifying information, not less true and not less disgraceful. But having described the *genus* we need not particularize the *genera*. For further information as to what these "Medecins de Londres" (as Molière has it) have been, I would refer a person to a sheriff's-officer or the Newgate Calendar. I leave these dirty fellows, lest their foul practices call forth similar language. For, as Hudibras says,

—— "That man is sure to lose
That fouls his hand with dirty foes,
For where no honour's to be gained,
'Tis thrown away in being maintain'd."

Let us leave the "Surgeons" and turn to the "Surgeon-Dentists," the makers of "incorrodible," "ferro-metallic artificial teeth"—inventors of "Succedaneum" and "Marmoratum" for the plugging up of teeth which their brothers, the "Surgeons," made rotten. These are a fungi of prolific growth, that start up in every shady corner. Like their brethren, they are mostly of the Jewish race, who were always noted for their propensities to deal in "gold," the far-famed "succedaneum" of the advertisers, "Mosaic" of course being understood. It is well known that the tribe of Judah were never pre-eminently distinguished by a love of learning: the only "science" in which a Jew can boast proficiency is that of "arithmetic," nevertheless, these "Dentists" seem wonderfully ignorant in "the extraction of roots." I am credibly informed that it is no uncommon thing for them to extract the *sound* and leave the *rotten* tooth behind, and when they *do* stop up a hole, it is on the true tinker principle of making two more! Can these "trifling mistakes" be wondered at, when a thought is paid to the previous occupations, the miscellaneous avocations, of the operators? These men are superior to formalities, they despise the dull routine of business, they plunge at once "in medias res." They would not waste their precious time in dull probationary apprenticeships or articles. They are gifted with intuitive perception—a bright halo of genius, by which, instantaneously,

"They know more of any trade by' a hint,
Than those that have been bred up in't."

Or, rather, they are plentifully endowed with "pertinacious impudence;"

"And he that has but impudence,
To all things has a fair pretence."
HUDIBRAS.

at any rate, in our enlightened capital.

Did space permit I could tell some pleasant stories of these "Surgeon-Dentists." I will give, however, a recipe to make one: first, take a well-furnished apartment, in a genteel street; stick up a large brass-plate (very large); advertise; use huge whiskers and "parlez vous"—and you will have a "patient" in twenty-four hours, off the Birmingham railroad. A Monsieur, who lived not a hundred miles from Great Russell-street, in the heyday of his professional course, only a *few* years since, took a house in a suburban village at the rate of about 150 guineas for the "season." He lived there in great style, ate the landlord's poultry and praised it, and feasted luxuriously on the fat of the land; and, not content with these "freedoms," he took the liberty (*nolens volens*, I presume) of dying there, in such a hurry, as neither to leave money or will behind him! The story of the old lady who paid another "Monsieur" a hundred pounds for a mouthful of teeth, which laid her under the *pleasant necessity* of living upon *bread sauce*, is fresh in recollection. Such an exposé did them much harm, but perhaps not more than may be expected from your pillory. I perceive, by Monday's paper, that Mons. Le D—— y and Son, who, at the top of the street, are Messrs. Lu—— and Co., "Consulting Surgeons," at the bottom of the *same thoroughfare* are "Surgeon-Dentists!! *O, tempora! O, mores!* If a flat escape the "cunning Isaac" at the top of the street, he is pretty sure to fall into his "jaw" at the bottom. Sir, I have presented you with a fair sample of our empirics, who, to sum up in a few words, are scamps of the lowest and most dangerous kind,

"Without one sneaking virtue in their train;
O, precious villains—scoundrels—rogues in grain."

"Nulla vertute redemptum à vitiis." To every reflecting mind the question must naturally occur, when shall this frightful system of incapacity, ignorance, and fraud be ended? From the days of of Dr. Rock, who flourished a century ago down to our own, "these roaring lions have been suffered to go at large seeking whom they may devour." Where, to the ignorant, the illiterate, to the world at large, is the line of demarcation between the regular and the irregular—the professional and the quack? Brodie and Key are "consulting surgeons:" so are L——s and P——y; the former are "operating" surgeons, the latter peform many curious operations, not forgetting those on the purse. Dr. Chambers is a physian, so is Dr. W——s M——y, and differs only (pardon the pun) in *degree*. If any qualification for the medical profession be necessary, why are not *all* compelled to possess it? If none be required, let not such a heavy expence, so long a course of study as is now requisite for the medical student, be thrown upon the shoulders of those who have a character to lose and a reputation to gain. But I will not fight a shadow. The "system" can be maintained on no grounds; it rests on no argument: it is suffered to exist merely because it *has*, it *does*, and ergo, it is supposed it *must* exist. Apathy views it—indolence leaves it. Sir, where the fault is, at whose door it should be charged, I leave others to determine,—content with pointing it out, I leave others to judge what must be the consequences, the natural results of what I have shewn to be the fact. Sir, no "uncalled" person pops on a wig and gown, and pleads at the bar—not every one that can shoulder a musket, enters a sentry-box—no lawyer, without his certificate, can charge 3s. 6d. for a letter (I have not that privilege, Mr. Editor). Yet where is the importance of these professions compared with medicine—where the health, and life itself, so delicate a matter, is in question—and in which profession, and this *only*, any person, no matter how disqualified, how disreputable, may intrude himself. The chemists were lately heavily fined for selling spirits of wine, a practice which encouraged no greater enormity than the too-frequent polishing of household furniture. We thus verified the lines of the poet, that

"Justice while she winks at crimes,
Stumbles on Innocence sometimes."

Sir, I shall conclude my letter (for the length of which I beg to apologize) by uttering, in common with Cicero, a complaint not less well-founded nor less common in our own than in his times, a want as much to be deplored *now* as then—"*Fuet ista quondam in hac republica virtus, ut viri fortes, acrioribus suppliciis civem perniciosum, quàm acerbissimum hostem coercerent.*

I am, &c.,
DELTA.

KING'S COLLEGE HOSPITAL.

CASES BY WILLIAM FERGUSSON, ESQ.

Tumour over the Parotid Gland.—Operation.—Lydia Halsted, ætat. 34, was admitted 26th Jan. 1843. Nine years ago she first perceived a small hard tumour a little in front of the mastoid process, which has since gradually increased to its present size, having progressed more rapidly within the last twelve months than at any previous period. The swelling is now very conspicuous, and seems to occupy the entire region of the parotid, extending, however, much beyond the anterior and posterior boundaries of that gland. It extends from over the mastoid process, towards the mouth, about four inches—this being its longest diameter: and from above downwards about three inches, the lobe of the ear being spread out on its surface. The mass is remarkably hard, and slightly moveable on the parts beneath; the skin over it is of a natural colour, much attenuated, and does not appear to be adherent to the disease. Has no pain in the part, but has uneasy feelings extending from the tumour upwards over the eyebrows. Patient is married, has had a large family, has always enjoyed good health, has no other complaint at present, and in every respect seems to be sound in constitution.—31. The tumour was removed to day. The patient was laid on the operating table, and a crucial incision having been made over the mass it was separated by a very careful dissection. The bleeding was copious, though no large vessel was divided. Four ligatures were applied: the edges of the wound were then brought together, and retained by stitches, straps, and bandages.—March 31. Since the operation nothing worthy of notice has occurred; the wound has healed, and the patient is this day discharged, cured.—In some clinical remarks, Mr. Fergusson said that in this case doubts had been entertained whether an operation should be performed, as the tumour seemed so firmly attached to the surrounding parts, that, to all appearance, there might be considerable danger in such a proceeding. It resembled such instances as those which had often been termed enlargement of the parotid gland, and he supposed that some might have designated the operation which he had performed as an instance of the removal of this organ. So far from this being the case, however, he had scarcely touched that gland—a few of its lobules only having been interfered with. When he first saw the case he came to the conclusion that although the tumour appeared firmly seated, there was such a kind of movement permitted as to indicate that the disease did not dip deep between the mastoid process and the angle of the jaw; it seemed rather to glide upon the surface of the parotid, although that movement was little more than perceptible. He had removed many tumours from this situation, and occasionally portions of the parotid with them, but in no instance had he seen a case, in his own practice, to which the description of extirpation of the parotid was applicable.—The tumour when removed was white, smooth on the surface, and of semi-cartilaginous hardness. On a section being made the aspect was granular and cartilaginous, with here and there some

softer parts mottled with bloody points, which Mr. F. supposed might ultimately have assumed a malignant character.

Stone in the Bladder.—Lithotomy.—Robert Wood, ætat. 60, farm-labourer, from Cranbrooke, Kent, admitted Jan. 28th, 1843. About seven years ago was suddenly attacked with pain in the loins, (having never previously suffered in the same manner) and shortly after passed with his urine several atoms about ha'f the size of a pea. The urine was tinged with blood, and he had great pain in the region of the bladder. From that time to the present has never been without suffering, and latterly his life has been very miserable. At present he has pain extending from the loins to the bladder, and from thence along the urethra to the glans penis, where it is most severe: he occasionally passes blood, and the urine, which he is obliged to evacuate forty or fifty times at night, causes scalding pain. Is otherwise healthy, though at times subject to rheumatism. Was sounded two years ago, but is not aware that a stone was detected: about a month since, the operation was repeated, and a stone was felt. Suffered great pain from each operation —Feb. 4. Since his arrival has been kept very quiet, chiefly in bed; bowels have been freely opened; irritation in the bladder has somewhat subsided, and the urine has assumed a pale straw colour, being very slightly acid. To-day, at 1 o'clock, the stone has been extracted by the lateral operation of lithotomy. About an hour previously, the rectum was emptied by an enema of warm water, and the patient was desired to retain his urine until the period of the operation. The staff having been introduced, and the patient bound in the usual way, an incision, commencing about one inch and three-fourths in front of the anus, and about a line's breadth from the raphé, was carried downwards and outwards about three inches, passing midway between the anus and tuberosity of the ischium: the skin having been divided with one sweep of the knife, the subcutaneous cellular tissue was next incised to nearly the same extent; a shorter incision was then made in the direction of the membranous portion of the urethra, and the left fore-finger was thrust through it towards the staff, when the point of the knife was carried into the groove, and run along towards the bladder; the knife having been withdrawn, the left fore-finger was pushed into the bladder, the staff was removed, and, with the aid of the forceps, a stone, about the size of a walnut, was extracted with facility. The patient was immediately unbound and carried to bed, having apparently suffered very little from the operation. The stone was nodulated on the surface, and so dark in colour that it appeared when first seen as if it were of the mulberry kind, but it was afterwards ascertained to consist chiefly of uric acid.—March 9. The history of this case since the operation presents nothing worthy of special comment. On the day succeeding the operation the patient expressed himself greatly relieved, and declared that he had suffered less during the proceeding than he was often wont to do whilst voiding urine. Has had no cause of complaint since the stone was extracted, and is now so well that he leaves the house to-day. Five days after the operation some urine passed by the urethra; the quantity gradually increased, and on the sixteenth the whole was voided by this passage, and the open surface of the wound in the perineum healed very speedily afterwards.—In his observations on this case, Mr. Fergusson contrasted it with the two immediately preceding (see *Lancet*, vol. i., 1842-3, p. 743), where the difficulties and dangers had been much greater, and where also the recovery was necessarily more tardy. Here the stone was known to be of comparatively small size, and as there was no great depth of perineum, no particular obstacle to the easy extraction of the stone could be anticipated. In the two instances referred to, the stone had considerably exceeded the average bulk; in one the prostate gland was remarkably hard and unyielding, and in the other the obesity of the patient made the depth of the perineum so much greater than usual, that this, combined with the magnitude of the stone, rendered the operation more than usually troublesome. In this instance the neck of the bladder had been reached with facility, and the stone had been brought through the prostate without that force which was necessary in the others; nor had there been any occasion for a second application of the knife to enlarge the wound in the prostate, as had been required in one of the other examples. The wound, too, had healed more kindly, for besides being smaller in size it was less ragged,—in other words, there was less confusion than in the former cases. Although often the largest wounds made in the operation healed very kindly, and it was not proper to calculate on the closing of such wounds altogether by their extent, it was but reasonable to suppose that where there was so little contusion, as in this last operation, the opening would in all probability heal as rapidly as was usually seen in the most successful cases of the kind. The students would perceive that this really had occurred; and here also there had been a remarkable contrast to the other in the circumstance that as soon as the urine had resumed its natural course the patient had all the power of retaining and voiding that fluid, that persons have who have never been subject to disease in the parts concerned. Frequent and sudden calls to make water, and inability to retain the urine for a length of time, were common temporary results of this operation, and in most instances some weeks or even months elapsed ere the parts were restored to their natural condition. Here, however, the operation, in every respect, had been followed with every advantage which could possibly be expected from such a proceeding.—*Lancet.*

DR. DICKSON AND DR. LAYCOCK.

To the Editor of the 'Medical Times.'

Sir--Dr. Laycock having at last thought it necessary to his character to get up something like a reply to my letters on the subject of his recent piracies, permit me, Mr. Editor, to beg the favour of your inserting the following rejoinder. Out of his own mouth I have convicted this physician of a mean plagiarism of my doctrine of the periodicity of movement of all vitality, and out of his own mouth I will now proceed to convict him of an equally disingenuous attempt to shuffle out of his discreditable position.

In the *Lancet* for 25th March last, in a paper on "Vital Periodicity," Dr. Laycock claims to have demonstrated five propositions, which he numbers 1, 2, 3, 4, and 5. With the first and essential one only, do I propose to deal. "1. That there is a general law of periodicity which regulates *all* the vital movements of *all* animals"--for this, with the other four propositions, he pretends to have discovered—"To prevent controversy, he says, I would observe that these propositions contain what I CLAIM AS MY OWN"—*Literæ Scriptæ Manent.* So much for what he claims: let us now see what he disclaims. "Dr. Dickson, (quoth this consistent gentleman) asserts that it has been the labour of his life to establish the discovery of the periodic movement of all vitality —of the periodicity of life in health—of the periodicity of life in disease—of the periodicity of movement of universal nature!—and that he won't be juggled out of it either by Mr. Wakley, Dr. Holland, or Dr. Laycock, or any one else. Now the plain truth is that the unhappy man has spent his life in trying to crack a blind nut, and his charge of plagiarism is all moonshine. I have NEVER claimed the discovery of the doctrine in question!" What then in the name of common sense does this "respectable physician" claim. What does he mean by the manifold productions which under the head of "vital periodicity" he has been palming upon the British Association and the readers of the *Lancet* as his *discoveries*?—discoveries of such importance too, as in the eyes of his patron and fellow plagiarist, Dr. John Forbes, must eventually change the whole face of physic. "Dr. Laycock (says the immaculate Forbes) has attempted to demonstrate a *general* law of vital periodicity."—"If his researches prove correct a considerable change must necessarily take place in both the theory and practice of medicine"—*his* researches! Aye, there's the rub. The value of the discovery of this great natural law or principle—the universality of periodic intermission and return—being thus distinctly acknowledged, the next question is, to whom does it belong? Not to Dr. Laycock assuredly, for Dr. Laycock himself has *now* abandoned his claim to it; no, nor to Dr. Dickson either, he adds, "for this best of reasons, that it is "*probably* just as old as the Pyramids"—*probably* not quite so old, Dr. Laycock—otherwise, why should it only now, for the first time, threaten to work such a change in the theory and practise of medicine? Something more satisfactory, however, than your assertion that it is, will be required at your hands before you be permitted to get out of the controversy you have so deliberately PROVOKED—*not* prevented! For keeping to "probabilities" still, as it is just probable that you, Dr. Laycock, may try to cover your retreat with the names of Hippocrates, Aristotle, Celsus, or some other of the ancients, I must be so plain as to tell you that *names* alone will neither satisfy the public nor me. No, Sir, if you still adhere to your *latest* assertion—an assertion the exact converse of the premises with which you set out—if you still intend to convince the world that not you, but I, am the plagiarist, I now call upon YOU to produce the pages and passages of the authors by whom you may find it convenient to say my labours have been anticipated!

The quibbles of speech to which you have descended, will scarcely provoke the smiles of your friends; for the flippant abuse of me, which you have done me the honour to introduce in your letter, I thank you most sincerely, and for the similar compliment paid me in last week's *Lancet*, by the publisher of your piracies, Mr. Thomas Wakley, I beg to offer that "honourable gentleman" my best acknowledgements. "Quacks and Bully" coming from him require from me the "retort courteous." The next time my "honourable friend," for such I must now certainly style him, does me the favour to publish a letter of mine, I hope he will pursue the exact same course he has done on this occasion, viz. bottle it up for five mortal weeks, then mispoint and misprint it, substitute commas for full stops, full stops for commas, capitals for small type, and *vice versa*; and, in a word, so unsentence the sentences, that such letter shall be his production rather than mine. Of course he will take care at the same time to suppress

any correspondence that may have passed between us in the interval, such as the very unimportant letters you. Mr. Editor, have just printed in the *Medical Times*, thereby confessing to the world his, Mr. Thomas Wakley's, high sense of my merits—merits so distinguished as, in his view, to entitle me to nothing short of the identical salutations with which certain respectable gabblers in times gone by, welcomed the illustrious Harvey and Jenner—the *stale* cackle of "quacks, quacks, quacks!"—Yours, Mr. Editor,

S. Dickson.

Clarges-street, 15th May, 1843.

WESTMINSTER HOSPITAL.

Distribution of Prizes.

Lord Robert Grosvenor, in the Chair.

Mr. White's Prize of Books, (value Five Guineas,) for the best Essay on the Anatomy and Physiology of the Digestive Organs:—Mr. Frederick Kelly, London; Mr. Samuel Probyn, Pontypool, Monmouthshire.

Lecturers' Prize for the best Written Answers to Sixteen Questions on the various branches of Medical Science:—Mr. Samuel Probyn, Pontypool, Monmouthshire.

Class of Anatomy and Physiology.—*Senior Division.*—1. Mr. Samuel Probyn, Pontypool, Monmouthshire; 2. Mr. Duncan Maclure, London; 3. Mr. Benjamin Longmore, London; 4. Mr. Peter Clarke, Leicestershire.

Juniores.—1, Messrs. J. H. King, London; 2. J. F. Williams, Anglesea; 3. Wm. Dixon, Grahame, Glasgow; 4. Thomas Derry, Lincolnshire.

Private Certificate—Mr. C. E. Sloper.

Chemistry—Mr. Benjamin Longmore.

Materia Medica—1. Messrs. J. F. Williams, Anglesea; 2, Wm. Dixon Grahame, Glasgow; 3, Thos. Derry, Lincolnshire; 4, Moses Morgan, Bristol; 5, C. E. Sloper, Pontypool; 6, John Hooper, Sussex.

Practice of Medicine—Messrs. Benjamin Longmore; —— Best, London; J. Welch, London.

Surgery—1, Messrs. Samuel Probyn, Pontypool; 2, Benjamin Longmore, London; 3, J. F. Williams, Anglesea; 4, John Welch, London.

Midwifery—1, Messrs. Benjamin Longmore; 2, James Hutchinson, Essex.

[From the report read to the meeting, we give the following extract, as of great interest to such of our readers as are engaged in Medical Education.—Ed.]

"Besides the daily routine of lectures to each class, there is one feature in our system of teaching which is, in a great measure, peculiar to our school, that of following up each lecture with *catechetical* examinations on the subject of the lecture. From much experience we are confident, that this plan of teaching combines many advantages. It forms in the pupils, habits of close and continuous attention to the lectures. It enables the lecturer to adapt himself to the various capacities of his pupils, and thus to carry his *whole* class along with him. It enables him to simplify as much as possible his subject, and to bring the essential points of the lecture into greater prominency, and to impress them much more forcibly upon the mind. So satisfied are we of the superiority of this system, that we have no hesitation in stating, that by this method of teaching, the students will carry off and retain, in one session, more sound medical knowledge than they can learn from two or even three courses of lectures delivered in the usual way."

PERISCOPE OF THE WEEK.

Cure of Ectropium by Blepharoplastie.—Dr. Bellingham, of St. Vincent's Hospital, recently had a young girl under his care with ectropium of the left upper eyelid, resulting from a burn in infancy. The tarsal cartilage was immediately below the eyebrow, the cilia were turned upwards, and there was a considerable projection of hypertrophied conjunctiva of a fleshy appearance partially covering the eye. The operation which Dr. Bellingham performed for the cure of this unsightly deformity, consisted in the transplantation of a flap of integument from the temple, to supply the place of the lost skin of the palpebræ. The steps of the operation were as follows; it was commenced by making a horizontal incision midway between the eyebrow and tarsal cartilage (these two parts being situated very close to each other) commencing at the inner canthus, and extending beyond the outer angle of the eye towards the temple, by which the integuments were divided; the parts were then put upon the stretch by means of a sharp hook inserted in the tarsal cartilage, and the cellular membrane underneath with the remains of the muscular fibres were incised in the same direction. The size and shape of the space to be filled up was next marked upon a slip of paper, which was laid upon the temple, and the amount of integument required thus calculated; the flap was then formed by continuing the incision, previously made in the lid, in a direction upwards and outwards on the temple, in order to avoid including any part upon which the hair grew, making first the side of the flap, which, when laid down, would correspond to the tarsal cartilage; the flap was then completed, by carrying another incision downwards and inwards, to a point at the outer angle of the eye, a little below where the former incision commenced; the subcutaneous cellular tissue was raised with the skin, a pedicle of the integuments, of sufficient breadth for the circulation to be carried on, being left. Previously to laying down the flap, two branches of the temporal artery required ligature; and, there was a considerable oozing of blood for some time, which running into the incision in the lid, caused delay; when this had nearly subsided, the slip which connected the flap was twisted upon itself, and laid down in its new situation which it was found to fit accurately; a needle was then passed through the point of the flap and the integuments at the inner angle of the eye, and the twisted suture applied; four other needles were then applied to the edges of the flap, two above and two below, and the parts were further supported by narrow strips of adhesive plaster between the needles. The wound in the temple was closed by two needles and the twisted sutures. Cold water dressings were applied. A certain amount of inflammation and general disturbance of the system followed, but were kept under; union by the first intention took place, the needles being removed on the 4th day. After the flap had united perfectly, the thickened and altered portion of the conjunctiva was excised, and as the lid then appeared to be rather too full, a small triangular portion, the base at the tarsal cartilage, was removed, and the edges brought together by means of two needles. The ultimate result of the operation is that the eyeball can be covered by the lid, and the deformity is removed, the eye not being liable to injury from constant exposure to the air. The patient of course does not enjoy the same power of motion in it as in the opposite lid.

New Mode of Galvanising.—Dr. Dick, in his work on the derangements of the digestive organs, speaking of the purely functional nervous derangements, and their treatment by internal and external galvanic factors, says, various modes of experiment, not indicated by him, may be plausibly adopted. For example, after loading a man's system, as far as prudence warranted, with zinc, both by means of inunction and internal exhibition, he procured a copper vessel, nearly capable of containing him. In this he was placed, and water, in which as much nitric acid as sufficed to acidulate, had been infused, was poured around him. Reaction very evidently ensued between the copper vessel and the zinc in the man's body, through the medium of the nitricised water. He became aware of a disagreeable, mixed, *numbing*, and *pulsating* sensation through the body generally, but especially about the middle parts.

Injurious Effects of Arsenic.—Mr. Erichsen states, that he has at present under observation a young lady of a highly nervous temperament, but otherwise perfectly healthy, and without any hereditary predisposition to disease, who, whilst suffering from an attack of psoriasis of the legs some years ago, was advised to take Fowler's solution, which she did, in the hope of speedily getting rid of her complaint, to such an extent, without the knowledge, however, of her medical attendants, that she brought on extensive derangement of the stomach, which was followed by a violent neuralgic attack; also, at a subsequent period, by a distressing train of hysterical symptoms, which terminated in a state of dementia, that, having now existed for nearly four years, may almost be looked upon as incurable.

Difficult Parturition.—Mr. Whitsed, of Wisbech, was called into consultation some years since by Mr. Hopkinson, of Peterborough, to a case of protracted labor, attended with wearing pains and excessive exhaustion. The child being dead, it was determined to deliver at once. The blunt hook was applied, and the head and shoulders extricated, but then an impediment offered, to overcome which more force was used, the result being, that half the child was extracted, the inferior half remaining behind in the womb. The maternal abdomen was still very large. The hand was then introduced into the uterus, and the feet brought down, but still delivery could not be accomplished. On passing the hand again, a tense substance or tumour was felt at the brim of the pelvis, which was ruptured, and an enormous discharge of fluid followed. Delivery was then completed, and the patient ultimately did well.

Poisoning by Adulterated Maccuba Snuff.—A very singular cause of poisoning is pointed out by Professor Otto, of Copenhagen, who details two cases where symptoms of poisoning were induced apparently by the use of maccuba snuff, adulterated by red lead. One of these ended fatally, the symptoms being those of lead colic, terminated by cerebral affection. On dissection, nothing abnormal was found in the abdomen, except a trifling enlargement of the colon, probably caused by frequent enemata. The brain was healthy, except a slight injection of the membranes. The second case was that of a young physician, who had suffered for a year from an affection of the abdomen, marked by colicky pains, and obstinate costiveness, during which he had become extraordinarily thin. He was a great snuff-taker, and long used the same snuff as the deceased patient. The snuff, on chemical examination, was discovered to contain from 16 to 20 per cent. of lead

Purity of Hydrochloric Acid.—M. Lembert observes, that among the impurities which destroy the value of hydrochloric acid as a re-agent, or for analysis, sulphurous acid is the principal. The process for its discovery, which he has recourse to, will demonstrate the existence of the smallest quantity, and will even succeed when the proto-chloruret of tin fails. His process is as follows:—a small quantity of the acid to be examined is saturated with the carbonate of potass; then a little of a weak solution of starch is added, and one or two drops of an iodate of potass or soda, which is followed by a drop or two of concentrated sulphuric acid, by which the sulphurous and iodic acids are set free, and re-act on each other. Iodine is thus set at liberty, and the liquid assumes a blue color. The sulphuric acid must be added only in very small portions, a new drop being added only when it has been ascertained the preceding one has not colored the liquid.

Causes of Strangulated Hernia.—In a communication published by Mr. Wilkinson King, under the lengthy title "On the causes of strangulation and death in cases of hernia, or the signs of constitutional or humoral disorder in such cases;" he advances an opinion given by him, in Guy's Hospital Reports, 1838, that most herniæ exist for years before they become subject to violent strangulation, and that the mean duration of three-fourths of the well recorded cases had been between fifteen and twenty-five years before danger arose. The conclusions he then drew were as follows: 1st. Most herniæ being of old standing before they become seriously strangulated, this result is not attributable to the state of the sac, but to that of the bowel; in which defective nourishment and power of vessels leads to more ready tumefaction; and all this seems attributable to the age and the organic deterioration belonging to it. 2nd The common and chief danger is, from a peculiar and unhealthy kind of peritonitis; the consequence, probably, of the same constitutional decay or decline of organs, which induced the strangulation. 3rd. The above facts lead to the conclusion, that prompt surgery, to remove the cause of inflammation, and the most cautious medicine to obviate, and not excite inflammation, and to add nothing to the oppressed condition of the patient, are indications even more pressing than has been hitherto maintained, at least among authors and the generality of surgeons. —Muscular exertion and local conformation are the causes of hernia; but the final or serious strangulation, at least four times out of five, is produced many years later, when a totally different state of parts and constitution has become developed. The acute strangulation of young persons, and its proper train of comparatively healthy symptoms, may find its analogy on rare occasions at any period of life. It is characterized by narrow stricture and acute reparative actions, and may be devoid of all the morbid traits of old standing hernia when strangulated, which is more like what is called incarcerated hernia, but devoid of healthy action, and fraught with signs of non-reparative inflammations, diffused actions, unorganized and pernicious effusions. Mr. Wilkinson King in this paper, which is somewhat diffuse in style and ill-constructed, treats, we presume, solely of hernia of long duration, occurring in constitutions debilitated by age, habits of life, the wear and tear of the system, and visceral congestion or other disease. In these cases, when strangulation takes place, it appears to us that he looks upon it as caused by what the older writers would call 'venous remora' or congestion, and the fatal result to be the consequence of unhealthy inflammation of the peritoneum or viscera, or the inability of the constitution to bear up against the injury. He says, in fact, that "defective reparation, unorganizable effusions, and deteriorated solid viscera seem to be essential constitutional concomitants of old hernia becoming seriously strangulated. His views are not novel, indeed must be familiar to every observant practitioner; but the practice he recommends, after the operation has been performed, is good and worthy attention; in the anticipation of fatal peritonitis, mild, speedy, and efficient remedies are the objects to be held in view, and every kind of aggravation from delay, violence, exposure to cold, or severe remedies, is to be regarded as highly dangerous. Out of 100 cases, twice as many instances of strangulation are admitted between November and April, as between May and October; and half the whole number are admittted, between December and March inclusive.

The Par Vagum.—M. Stilling says, the par vagum is both motor and sensitive. The superior laryngeal nerve is solely sensitive, having no effect in producing motion in the glottis. The recurrent nerve is motor, and sensitive also, though in a less degree than the superior laryngeal. The glottis, and the whole larynx, derive all their sensation from the first-named branch. The trachea derives its sensation from the recurrent branch, and the lungs from the branches of the par vagum, which they receive. The glottis depends for motion on the recurrent branch, and not at all on the nervus accessorius. Irritation of the roots of the vagus nerve within the skull causes the same result as irritation of the recurrent branch. The quality of the voice is dependent on the condition of the superior laryngeal nerve, and the degree of harmony between this and the recurrent branch. With regard to the motions of the pharynx: in ordinary respiration the pharynx is closed; it is only in abnormal circumstances that it contains air. In most animals the pharynx manifests a contractile action, or vibration of its muscular fibres during expiration. This action is not perceived in inspiration. The section of the par vagum determines a contraction of the pharynx, as does irritation of the recurrent and superior laryngeal nerves.

Cyanosis.—Cyanosis is characterised by the skin having more or less of a livid or blue color, especially where the capillary vessels are most conspicuous, or where the integumentary membrane is most delicate, as in the lips, the cheeks, and under the nails. The mucous membrane of the mouth and nostrils also presents a livid, instead of its usual bright scarlet tint. This livor of the general surface is accompanied by habitual dyspnœa, tumultuous action of the heart, irregularity and intermittance of the pulse at the wrist, and an inferior capacity to engender caloric. The dyspnœa and irregular action of the heart, generally more or less felt at all times, are greatly aggravated upon occasion. Slight efforts, the act of coughing, of going to stool, and the like, are apt to bring on fits of suffocation, and when the disease is far advanced, attacks of leipothymiæ, in one of which the patient expires. Cyanosis is usually apparent from the period of birth, and when the livid or purple hue is very deep, the child will, in general, scarcely survive more than a few days or weeks. If the tinge be less intense, they may struggle on to puberty, when they very commonly perish. Such children have been observed to grow tall and slender, the muscular system is but very slightly developed: their extremities seem to consist of little more than skin and bone; they are fragile beings, upon whose likelihood of long life no venture can be made: occasionally, however, the liver may gradually disappear, and the patient recover altogether, Cyanosis was early attributed to an imperfect condition of the partition between the right and left auricles of the heart, with which it is frequently connected; but cases of cyanosis have occurred which were not referable to any such organic imperfection, and on the other hand, cases have been met with of very free communication between the auricles, without the occurrence of cyanosis. In one very remarkable instance, the particulars of which are contained in the transactions of the King's and Queen's Colleges of Physicians of Dublin, the communications between the two sides of the heart were so large that the organ might have been considered as single, or as consisting of but one auricle, and one ventricle. The pathological condition which has been found accompanying most of the cases of cyanosis has been a dilated and thickened state of the right cavity of the heart.

Value of the Soil.—About 300 acres of poor land near Edinburgh, formerly dear at 40s. or 50s., per acre, have been irrigated during the present century by the contents of a large uncovered common sewer. This irrigation has so increased the value of the land, that it lets for from 20*l.* to 30*l.* per acre. In 1826, 57*l.* per acre was the rent of some of the richest meadows. As the sewer is a nuisance, attempts have been made to divert it, but successfully resisted. The value of the irrigation is estimated at 150,000*l.*—the annual value of the refuse of Edinburgh being from 15,000*l.* to 20,000*l.* The value of the metropolitan refuse is nearly double the cost of the water supplied to the metropolis.

Sugar in the System.—From a series of experiments instituted by Dr. Percy, to ascertain the causes of diabetes, he concludes that 1st. when grape sugar is present in the blood in a certain quantity, a portion of it is speedily eliminated by the kidneys, and may be found in the urine. 2ndly. When grape sugar is present in the blood only in small quantity, it does not pass into the urine in an appreciable degree; in this case it probably undergoes oxidation in the lungs. 3rdly. When cane sugar is present in the blood in a certain quantity, a portion of it passes into the urine as cane sugar. It does not appear to be converted in the smallest proportion into grape sugar during its passage through the blood. 4thly. When cane sugar is present in the blood in large quantity, it exerts a powerfully diuretic action, and the urine evacuated is principally a solution of sugar. 5thly. When grape sugar is introduced into the stomach under conditions favourable to absorption, a portion of it is rapidly absorbed, and passes into the urine, and 6thly. when a dog is fed upon cane sugar and water, a portion of the sugar may be found in the urine.

Iodine in Natural Nitrate of Soda, and in the Nitric Acid of Commerce.—M. Lembert, Experimentalist in Chemistry at the Ecole de la Martiniere, at Lyons, has ascertained, by a series of well-conducted experiments, that iodine does not exist, as has been hitherto supposed, solely in the state of ioduret and hydriodate, but also in that of iodic acid combined with soda, producing an iodate of soda,—that cold nitric acid can act upon iodine by its oxygen, and give rise to the formation of a small quantity of iodic acid, and also that the iodine may act upon the water of the nitric acid, and thus hydriodic acid, as well as iodic acid, may be formed.

Cæsarean Section.—The discordance which exists between Continental and British practitioners is strikingly displayed respecting the Cæsarean section. The reports of 258 cases of this operation have been collected by Michaelis, 144 of which occurred in the last, and 110 in the present, century. Of these cases, 140 proved fatal. Velpean states that the operation was performed twenty-eight times between 1810 and 1820; and thirty-one times from 1821 to 1830. Dr. Churchill says the operation was performed 316 times between 1750 and 1841, and that the mortality was 52.8 per cent. for the mothers. In Great Britain the reports of at least 27 cases have been published, and in 25 of them it was fatal to the mother. Other fatal cases have occurred, which have not been recorded. There is no practitioner of reputation now in this country who would recommend the operation upon the living body, if delivery could be effected by the perforator and crotchet. Wherever the presenting part can be reached, to apply the perforator and crotchet, an attempt should always be made to deliver, and the Cæsarean operation reserved for those cases in which the distortion is so great, that the os uteri and presenting part are entirely beyond reach.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Wednesday, May 10th, 1843:—

R. B. Yeats, G. Gwillim. C. L. Prince, H. E. Brewer, J. Pickop, J. P. P. Chambers, T. W. Rimell, J. Sykes. T. R. Wheeler, E. Armstrong.

Admitted Friday, May 12th, 1843:—

D. Perkins, F. Tinker, F. Taylor, R. A. Bankier, T. Seccombe, H. Willats, R. H. Russell, from Quebec, A. Gottreux.

Admitted Monday, May 15th, 1843:—

B. Pinchard, F. R. Rose, T. S. Fletcher, J. W. Savage, W. Hobbs, F. Hetley, C. H. Brooking, J. Eddison, S. Fenwick, J. Smart, R. H. Boodle, W. Haswell, W. Clayton, H. W. Watling, J. Barrow. J. St. J G. Parsons.

ADVERTISEMENTS.

London: Printed and Published by JAMES ANGERSTEIN CARFRAE, 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex,—May 20, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 192. Vol. VIII. LONDON, SATURDAY, MAY 27, 1843. PRICE FOURPENCE. STAMPED EDITION, 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper, and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per Half-year, Post-free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE VII.

Our subjects of to-day form a sequel to those of the last lecture; they are bodies which contain no nitrogen, but are classed together from their general analogies, and similarity of composition. They are the *fats* and *oils*.

With regard to ultimate composition: they may be represented as oxides of hydro-carbons; they contain much less oxygen than the preceding substances. In the following table, for instance, I have contrasted the composition of the fats, with that of the starch class.

$$\left.\begin{matrix} C_{11} \\ H_{10} \\ O \end{matrix}\right\} = \text{Fats.} \qquad \left.\begin{matrix} C_{12} \\ H_{10} \\ O_{10} \end{matrix}\right\} = \text{Starch.}$$

So that if you compare these substances with those which last occupied your attention, you will see that they are characterised by the great excess of carbon and hydrogen over the oxygen.

The following table gives you the composition *per cent.* of several of these oily bodies, and will serve further to illustrate the peculiarities which I have just adverted to, and to show the comparative proportions of their ultimate elements.

	Olive Oil.	Linseed Oil.	Castor Oil.	Stearine of Olive Oil.	Elain of Olive Oil.
Carbon	77.2	76.0	74.0	82.2	76.1
Hydrogen	13.4	11.4	10.3	11.3	11.6
Oxygen	9.4	12.6	15.7	6.5	12.3
	100.0	100.0	100.0	100.0	100.0

These, which are oils of vegetable origin, may be compared with the following analysis of cetin, which is purified spermaceti, and of spermaceti and its oils, and of bees'-wax.

	Cetin.	Spermaceti.	Spermaceti. Oil.	Bees'wax.
Carbon	81.7	79.5	78.0	81.6
Hydrogen	12.8	11.6	11.8	12.4
Oxygen	5.5	8.9	10.2	6.0
	100.0	100.0	100.0	100.0

Leaving these general points respecting the ultimate composition of fats and oils, we may proceed to examine some of their principal varieties, and ascertain how far they are resolvable into other principles. We shall also have to examine the action of certain agents upon them, in reference to the manufacture of soap.

There is not, as I have already observed, any difference in regard to ultimate or proximate constitution between animal and vegetable fats and oils; at least, a general analogy pervades the whole series of fatty bodies, whatever may be their origin: when liquid, they are called fixed or fat oils; when solid, they constitute fat, lard, suet, &c., and the solid vegetable oils were formerly designated *butters*, such as butter of nutmeg, coco, chocolate, &c. These fats are respectively deposited in fibrous or membranous tissues or cells, and as their fusing points are below, and generally much below the temperature of hot water, they are easily freed from foreign matters, by pressure or filtration, at 212° or less. In thus purifying fat for the purpose of making tallow, the membranes that are left behind, are pressed into cakes, and go into the market under the name of *greaves.* Fat is useless as a manure, but greaves is a very valuable one, and out of the membranous matter from which the fat was extracted, we can obtain gelatine and albumen; it is in fact, one of those nitrogenized bodies we have before considered. The fat itself, thus deprived of the cellular tissue or medium, constitutes *tallow.* Now, let us take an analagous instance of a fat from the vegetable kingdom, of which we have several. There is one very important in connexion with the arts which is coco-fat; or the concrete oil of the fruit of the coco palm, which contains a large quantity of it. Another similar fat is expressed out of the nutmeg; when nutmegs are bruised and pressed warm, a large quantity of oily matter is obtained from them; it is made in large quantities in Holland, and imported into this country, chiefly for medical use. There are a number of other vegetable and animal oils possessing these general characters, but varying considerably in their respective fusion-points, some being hard, others unctuous, others liquid. Among the liquid animal oils, we may refer to whale or spermaceti oil, and among the vegetable oils, to those of the olive, almond, and castor seed, as common examples. They all closely resemble each other in many respects, but they differ in some particulars, which we shall point out. They are obtained by a variety of processes; pressure, with or without the aid of heat, being usually resorted to in the extraction of those from vegetables. In the manufacture of almond oil for instance, the almonds are reduced to a coarse powder, and subjected to powerful pressure; the powdered seed is sometimes heated, or the plates of the press are heated, by which the proportion of oil is increased, but it is apt to acquire both colour and odour, so that the purest and blandest oils are generally those which are called *cold drawn.* In mentioning almond oil, I must remind you of the curious fact of the perfect identity between that from sweet and bitter almonds; the poisonous qualities of the bitter almond not being developed, except under the influence of water, when very complicated changes ensue, of which I shall endeavour afterwards to give you the theory. Castor oil is now for the most part obtained by cold pressure, and not this only, but to render it less disagreeable to the palate when used in medicine, or to deprive it of odour when employed in pomatums and other applications for the hair, such as Macassar oil, and so forth, it is generally bleached and purified, and in these processes, it is often rendered nearly inert as far as its pharmaceutical uses are concerned.

Now all these oils have certain common chemical characters; they are insoluble in water, and soluble, though in very different degrees in absolute alcohol: ether also dissolves them—and this last solvent is that which we usually resort to in those cases of proximate analysis where our object is to separate and ascertain their quality: to give you an instance: I wish to know how much butter is contained in a given sample of milk, or to compare the milks of different dairies: I cautiously evaporate a given quantity of the milk to dryness, in a water-bath, so as not to injure or decompose it; I then digest the dry residuum in ether, which abstracts the butter from the remaining caseum and sugar of milk, and then by pouring the etherial solution upon water, and gently heating, the ether evaporates, and leaves the butter, which when cold, may be collected and weighed.

When the fixed oils are highly heated, subjected for instance to a red heat, they undergo peculiar and complicated forms of decomposition, and the products thus obtained from the different oils are very various; pyrogenous or empyreumatic oils distil over, of various degrees of volatility; some of them yield peculiar hydrocarbons, others solid or crystallisable products, but I must pass over the details relating to these curious inquiries as not consistent with the object of these lectures, and endeavour to lay before you an outline of the results of Chevreul's admirable and laborious researches in this department of organic chemistry.

Chevreul resolved all oils and fats into two or more distinct fatty principles; one, liquid at comparatively low temperatures, which he called *elaine;* the other solid, *stearin* or *margarin*, and he showed the methods by which these proximate elements of the oils and fats might be separated, as by the action of hot or cold ether or alcohol, or in some cases, more simply, by pressure. Hogslard, for instance, carefully subjected to great pressure between folds of bibulous paper has its *elain* absorbed by the paper from which it may afterwards be obtained by the action of hot water in the form of a liquid oil, whilst the stearin remains as a hard brittle fat from which good candles may be made; this separation of hogslard into its liquid and solid fat is economically carried on in America; the oil being used for burning in lamps, and the stearic portion for the manufacture of candles.

Again, in regard to olive oil; if this be congealed by cold, and then similarly pressed it may also be resolved into an oil and a fat, the latter being chiefly *margarin.*

[Mr. Brande exhibited specimens of pure elain, margarin, and stearin, from various sources, and shewed samples of candles made from several varieties of the latter; especially from hogslard, palm-oil, cocoa-nut oil, and olive oil.]

Chevreul then directed his attention to the action of alkalis upon fats and oils and to the changes which they undergo in the process of saponification, of which he established a new and satisfactory theory.

When a fat or oil is boiled with a solution of caustic soda, a soap is formed which floats upon the remaining liquid and gradually concretes, while a peculiar sweet substance is found in the liquid which has been called *glycerine*, and which is either evolved or formed in all cases of saponification.

Soap is manifestly a true chemical compound; its properties are quite distinct from those of its components: the alkali has lost its causticity, and the oil its greasiness; soap is perfectly soluble in pure water and in alcohol, and it is well known to possess remarkable cleansing or detergent powers which indeed are peculiar to it.

If I add an acid to a solution of soap I decompose it; the acid combines with the alkali of the soap, and the fatty matters are separated in a concrete form; here, for instance, I add a little dilute sulphuric acid to a soda soap of tallow; sulphate of soda is formed, and the tallow separates; but the latter has undergone a change and is no longer the mere mixture of stearine and elain, but of *stearic* and *oleic acids*, these acids being separable by pressure in a solid and liquid form; and if I now compare the stearic acid thus produced with the original stearine I find it is a harder and more crystalline substance; that it bears in fact a considerable resemblance to spermaceti; it combines with bases and forms a distinct class of compounds which have been called *stearates.*

The oleic acid, into which the elain of the fat has been converted, is also different from the original elain; it unites to bases and forms salts called *oleates.* So also the margarin of olive oil is converted by saponification into *margaric acid* forming a class of salts called *margarates.* You will observe, therefore, generally in regard to fatty bodies that when they have been acted on by the alkalis they

undergo certain changes and form a class of compounds called soaps, in all of which the original fats are converted into fatty acids; common *hard soap* being a stearate and oleate of soda; *soft soap* an analogous compound of potash.

These discoveries regarding the changes which the fats undergo when acted upon by certain salifiable bases, as in the processes for making soaps, have led to a new branch of industry in their application to the manufacture of candles. If for instance I convert the stearine of tallow into stearic acid, I find the latter yields a much harder and better candle than any I could obtain from the tallow itself: the great question therefore is how to conduct this saponification of tallow sufficiently expeditiously and economically so as to yield an article capable of being manufactured into candles upon the large scale: this is effected as follows:—the tallow is melted with water, in a steam vat, and saponified by lime, which forms with it an insoluble soap or stearate and oleate of lime; this is decomposed by dilute sulphuric acid; sulphate of lime is formed and falls to the bottom of the vat, whilst the fatty matter, now in the form of a mixture of stearic and oleic acids, separates and concretes upon the surface; in this state it is subjected to powerful pressure in a heated hydraulic press; the oleic acid is squeezed out, and the stearic acid remains in the bags; a second fusion, crystallisation, and expression, finally gets rid of the oleic acid, and the stearic acid having been fused and cooled, is now fit for the manufacture of candles, which, when carefully made, are of excellent quality and not much inferior to spermaceti; they are apt in consequence of crystallising in the moulds to acquire an inconvenient brittleness which is prevented by the addition of a very little French chalk or magnesia to the liquid fat just before casting. White arsenic answers the same purpose, but ought never to be used. These candles are manufactured upon a large scale and for exportation, by Mr. Hale, of Cateaton Street, to whom I am indebted for the abundant samples of the various products now upon the table. There is some difficulty, I believe, in obtaining a remunerating price for the oleic acid; it is chiefly used for some kinds of soap.

I may now say a few words in reference to the more abstract chemistry of the fats and fatty acids, and their associates. To obtain stearine in its purest form, I have here digested some purified mutton-suet in ether, by which the elain is removed, while the sterine remains in the form of a crystalline matter, something like spermaceti; it fuses at above 145 deg., and is insoluble in water, and in cold alcohol and ether, but it dissolves in hot alcohol and ether, and separates as the liquids cool. By the action of the alkalies, stearine is resolved into glycerine and stearic acid, the formula of glycerine being—C_6, H_7, O_5, and that of stearine—C_{142}, H_{141}, O_{17}. Now, by the action of strong bases, 1 atom of stearine is resolved into 1 atom of glycerine, 2 of stearic acid, and 2 of water, as shewn in this equation:—

1 atom Stearine $= C_{142}, H_{141}, O_{17}$, forms—

2 atoms Stearic Acid	$=$	C_{136}, H_{132}, O_{10}.
1 „ Glycerine	$=$	C_6, H_7, O_5.
2 „ Water	$=$	H_2, O_2.

the equivalent of stearic acid being 514, and its formula $= C_{68}, H_{66}, O_5$.

Pure stearic acid fuses at about 160°; it is insipid and inodorous, and when heated in a tube out of the contact of air, its vapour condenses without apparent alteration; its alcoholic solution reddens litmus: it is a very feeble acid, and only slowly expels carbonic acid from the carbonates at a boiling heat.

Margarine may be obtained, as I have already remarked, from olive oil; it abounds in human fat; it is more soluble in ether and alcohol than stearine. It fuses at about 120 deg. Its formula is C^{74}, H_{74}, O_{12}, and is resolved by saponification into 2 atoms of margaric acid, 1 atom of glyeerine, and 2 of water; the formula of margaric acid being C_{34}, H_{33}, O_3. When stearic acid is heated, it affords a white sublimate of margaric acid, along with some other products.

Elaine is best obtained from almond oil; the ethereal solution of which, when exposed to a very low temperature, deposits margarine and stearine, and retains elain, which may afterwards be obtained by the evaporation of the ether: it remains fluid at O_0. When saponified it is resolved into an atom of glycerine, 2 atoms of water, and 2 of oleic acid; the formula of elain being C_{94}, H_{87}, O_{15}, and that of oleic acid C_{44}, H_{39}, O_4. The alkaline oleates are greasy and uncrystallisable. The action of nitric acid on the fatty acids, is attended by some very interesting results; among the products which may be thus obtained, are succinic and suberic acids; the acids, namely, of amber and of cork.

When the fat oils are saponified by oxide of lead, they form *plaster*—a compound in which soda or potash is replaced by oxide of lead: common lead plaster is a hydrated oleo-margarate of oxide of lead.

There are a peculiar class of fixed oils, called *drying oils*, and which are distinguished from the fat oils by absorbing oxygen when exposed to air, and becoming resinous instead of rancid; when saponified, they yield glycerine, and a peculiar oleic acid.

The most complicated fatty matter with which we have to deal, is *butter;* it appears to contain no less than six different kinds of fat, each of which yields, when saponified, a distinct fatty acid: these have been distinguished as stearine, margarine, oleine, butyrine, caproine, and caprine.

Castor oil, and some of the fish oils, also yield distinct kinds of fat, and consequently also peculiar fatty acids. Wax is resolvable, by the action of hot alcohol, into *cerine*, which is soluble, and *myrecine*, which is insoluble in that menstruum.

The products of the saponification of spermaceti are also very peculiar; margaric and oleic acids are formed, but, instead of glycerine, a peculiar base which (from its atomic relations to ether and alcohol) has been called *ethal*, is set free: it is a white crystalline substance, fusible at 120 deg., and volatile at higher temperatures; its formula is C_{32}, H_{34}, O_2.

[Mr. Brande here described the method of making mottled, coloured, and scented soaps. Transparent soap is obtained by dissolving soap in alcohol, and allowing the alcohol to evaporate: it is a very pure form of soap, and does not, as is the case with all other soaps, contain water. He also adverted to the proposals which have from time to time been suggested, for the manufacture of soaps for washing in sea-water, and to the addition of silica, alumina, clay, and other substances, to soap.]

I may now conclude this part of our subject by a few remarks upon the sources and uses of fat in the animal economy. According to Dumas and some other chemical physiologists, the fat of animals is derived exclusively from the vegetable kingdom; that is, animals have no power of *forming* fat. The graminivorous tribes take it in ready formed with their food; and carnivorous animals, in whom, however, fat is usually very scanty, derive it from them; directly therefore, or indirectly, the fat of animals is derived from the fats, oils, wax, and so forth, more or less of which exists in all our vegetable food: indeed, I have already on several occasions alluded to various forms of oleaginous and fatty bodies blended with other proximate principles. But, inasmuch as the quantity of fat in an animal is by no means always proportionate to the quantity which he consumes or derives from his food, it would appear that a power of making or producing fat must belong to the animal as well as to the vegetable economy. This view of the subject has been adopted and well defended by Liebig and others, and it seems probable that the non-azotized matters of our food are those which are thus occasionally elaborated, and which, by deoxidizement, may easily be supposed convertible into fat. It would further appear, that in the function of respiration the consumption of fat is concerned in the evolution of animal heat; that, in fact, its carbon and hydrogen are burned into carbonic acid and water; and that, for such purposes it is often, as it were, stored up in the animal economy and contributes to the function of respiration when other sources of carbon and hydrogen are scarce. Fat forms a large portion of the food of the inhabitants of the globe, and in cases of starvation it is the fat which first disappears.

In short, the whole system of fattening animals, which in prize-cattle is often carried to so absurd an extent, amply proves the power possessed by the animal of forming or elaborating fat out of materials which do not contain it ready formed, or as one of their *proximate* principles, though they abound in its ultimate constituents. Sheep, oxen, pigs, and poultry present constant cases of this kind, and the tendency which is occasionally observed in the human subject to become corpulent, independant of any particular consumption of fatty or greasy articles of diet, must evidently depend upon the power of *making*, and not merely *assimilating* fat. Whence also the immense accumulations of oil and grease by the whale and the porpoise, unless those animals had the power of converting—not certainly starch, sugar, and such things, because upon them they do not feed—but of converting other forms of animal matter into certain modifications of fat.

Lastly, in reference to the formation of wax by the bee; it was once supposed that the pollen of flowers furnished wax ready made, and that the bee only collected and deposited it. But wax is, as we have seen, very similar in composition to the fatty bodies in general, and it is apparently produced by the bee being obliged to eat his own honey; that is, when they have not an opportunity of depositing it in their cells, they digest it into wax.

ON THE LAWS OF THE DEVELOPMENT OF ORGANS; OR TRANSCENDENTAL ANATOMY APPLIED TO PHYSIOLOGY.

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SUMMARY.—*Law of symmetry of the organs arising from the external layer of the germinative sacs—Duality of the spinal marrow, of the central commissures of the brain, and of the nervous axis of the invertebrata—Centripetal formation of the osseous system—Symmetrical formation of the muscular system—Development from periphery to centre of the organisms produced by the vascular layer—Law of decussation of the sanguiferous system—Formation of the organisms from the mucous layer of the germinative sac—Explanation by organogeny of some apparent exceptions to the law of symmetry—Law of conjugation of organisms.*

WE have in our preceding lectures attempted to prove that the organisms of the embryo issue successively from the germinative layers; that they are formed at first in excess, and that their equilibration is subsequently accomplished by the reciprocal influence of the one system upon the other. We have not yet, however, considered the *mode* of their formation, or the *state* in which they are originally produced. Are then these organisms pre-formed, as it were, within the germinative layers?—or do these layers enclose but their elements? If they enclose the elements alone, in accordance with the theory of epigenesis, we must then seek the order and rules according to which they are produced. We must first ascertain the general law of their primitive development, to be enabled to deduce the fundamental laws of their configuration, and to ascertain the principle of their existence. Now, the primitive state of all organisms is one of *duality*. All, without exception, are double at their first appearance; all are in pairs. We find the right side of the young embryo an exact repetition of the left; the single organs which are subsequently found upon the median line, forming buttresses or pillars upon which the others rest, become such merely by the fusion of the primitive duality which they possessed at the commencement. The embryo then results from the re-union of two embryonic halves; the single animal, so to express it, is the product of two halves of the animal. We have already said that after fecundation, the first act of incubation is to separate into two equal parts the germinative membrane of the proliferous disk, to transform it into two sacs, of which one is to the right and the other to the left. We have seen also that at their

earliest appearance these sacs are separated from one another by a space which has been denominated the primitive line, and we have suggested that each of these sacs might be considered as a sort of reservoir enclosing the half of the future organisms of the embryo. If such then be the case, we shall be enabled to trace the development of the half of these organisms from each sac, as well as the subsequent conversion of these two halves into an entire body.

Let us in the first place examine the origin of the organs of relation, or of those arising from the external layer of the germinative sac. I need not stop to prove that the peripheric nerves are double in the vertebrata as well as in the invertebrata. We know perfectly well that all animals are endowed with a double nervous apparatus of relation. We know that all the nerves, that all the ganglia of the right side, are a perfect repetition of the ganglia and nerves of the left side. These are commonly received notions. The primitive duality of the cerebro-spinal axis has, on the contrary, been combatted with so much the more energy as its primitive unity evidently formed the corner-stone of the whole system of centrifugal development. Now the two cords by which the spinal marrow is at first manifested are so apparent in the young embryos of birds, of reptiles, of the mammifera and of man, that no doubt can remain on this subject. Every embryogenist of the present day must be satisfied of the primitive duality of the medulla oblongata; he must have recognised the two nervous layers giving rise to the cerebrum, as also those from which the cerebellum is developed; the double fasciculi constituting the corpora callosa, the double layers of the fornix, of the septum lucidum, &c.; the duality, in a word, of all the central parts of the nervous system of the vertebrata. The duality of the nervous axis of the invertebrata, even where it seems single, as in most insects and the crustacea, is a fact which has been demonstrated by M. Ratké in his able work on the embryogeny of the craw-fish; and this duality being constantly persistent in the *cirripeda*, the *cimothoe* and the *talitra*, being even more marked still in the greater part of the *mollusca*, the duality or symmetry of the nervous system becomes an incontestable fact, and we might add incontested, if we are to judge by the publication of all recent works on organogeny.

That the centripetal law and the law of symmetry should have been overlooked in reference to the nervous system, is a fact which is easily accounted for, when we consider the difficulty with which the subject is surrounded; but that they should have escaped the notice of those able investigators who have directed their attention to the osseous system, is most remarkable; inasmuch as the eccentric development is nowhere more marked than in the mode of appearance of the bones. Thus, in the thorax, the clavicle appears first, then the lateral processes of the vertebræ, then the ribs, and lastly the sternum. In the pelvis, the ilium and ischium, placed at the outer parts, are the first to become ossified; then the pubis, which is to the pelvis what the sternum is to the thorax,—the central portion of the osseous ring. However complicated may appear the ossification of the cranium, it proceeds invariably in the same order and according to the same rule, the osseous *nuclei* showing themselves in the first place at the periphery, then encroaching nearer and nearer towards the centre of the bone. Thus, in the temporal bone, the first point of ossification is found in the zygomatic process; next come the bones of the ear, then the petrous portion. The ossification of this bone thus proceeds in an eccentric direction, or from without inwards. The same thing may be observed in the larger and smaller *alæ* of the sphenoid bone, that is to say, that ossification commences in the peripheric parts, whilst it terminates in the centre. So also, with the ethmoid bone. The centripetal development of the osseous system is then an established law. The primitive duality of the bones occupying the *axes* of the skeleton, and which are all single in the perfect animal, is a necessary consequence of this principle. Thus the body of the vertebræ is primitively double; there is a half-spine to the right, and another to the left. The body of the sphenoid bone is, in like manner, double or rather quadruple; for every one is aware that in the beginning there are two distinct sphenoid bones. The ethmoidal plate, and the vomer, which are processes of bone so thin, that they seem scarcely able to contain a bony nucleus, are however developed by two osseous plates. So, according to the same invariable law, we have at first two ossa hyoides, two inferior maxillæ, two sterna, &c. In a word, there is not a single exception to this duality of the bones. The same may be said of the duality of the muscles: a fasciculus of muscles seated on the right side of the trunk of the animal, always has, or ought to have, it's corresponding fasciculus on the left; without this, the equilibration, indispensable to voluntary movement, would be impracticable. Thus the duality of this part of the muscular system has never been denied. But this duality has been denied in those muscles destined to form certain openings in the body; it has been denied in the muscles of the uvula, and in the diaphragm, and most especially so in the muscles entering into the composition of the organs of vegetative life; that is to say, that the muscular duality, undisputed in its peripheric portion, has appeared doubtful in the central parts, where, nevertheless, it is originally very marked. Thus the uvula has its two sets of muscles; there is, at first, a half-diaphragm to the left, and another half to the right. The pharynx is composed of three pairs of muscles. The œsophagus has its two longitudinal fasciculi, as well as the stomach and the intestines, the uterus, and the bladder. The orifices of the mouth, of the anus, of the vagina, and those of the diaphragm, are all formed by pairs of muscles, of which the one half constitutes the one side of the opening, and the second half the other side. The bones, the muscles, the nerves, the cerebro-spinal axis, the brain, the spinal marrow, every thing which arises from the external layer of the germinative sacs, is then rigorously subjected to the centripetal law of developments, and to the law of symmetry, which is a consequence of it. All these organisms are developed in pairs from the germinative sacs, which each furnish, by halves also, the membranes composing the external germinative layer.

But is it the same with the organisms arising from the vascular layer? Shall we see the vessels composing this layer developed from the circumference towards the centre? Shall we see those innumerable veins and arteries formed from without inwards, and in pairs,—the one half being on one side, and the other half on the other side? Shall we, in fine, see the two halves of the vascular layer, proceeding each from its own germinative sac, and serving as a kind of stock or root to the vessels of the body of the embryo, to its veins, its arteries, and even to the heart itself? If such be the case, we shall have here, again, an undoubted confirmation of the centripetal law and of the law of symmetry. Now, such is the fact. Trace the manifestation of the vessels of the primitive circulation. Where do we see them commence? Is it at the centre of the omphalo-mesenteric membrane, or at its periphery? Is it from within or from without? The circulation, as the formation of the vessels, invariably commences at the circumference of this membrane, at points the most distant from the centre. There, upon the extreme boundaries of the membrane, you see appear in the beginning two yellowish streaks—the one on one side, the other on the opposite side. To these streaks, which are the first signs of the great circular vein, which in the centrifugal system was named the terminal vein, but which in accordance with the centripetal theory is called the proto-genial or ante-genial vein, because it precedes the whole sanguiferous system;—to these primitive streaks are successively joined other streaks of the same colour, which proceeding invariably along the periphery of the membrane constitute a vascular arch on the right side, and a second arch exactly similar on the left side. Scarcely have these two halves of the primitive sanguiferous system become clearly delineated, but we see produced in innumerable little isolated clusters, the venous and arterial capillaries which constitute the substance of each half of the vascular layer, and which so constitute it by their repeated vascular communication, at first with the circular vein, and then one with another, so as to give rise to the trunks which are carried into the body of the embryo. The peripheric sanguiferous system is, then, clearly marked out and established before the first appearance of the central veins and arteries to which the future developments of the embryo are devolved; the veins appear first, then the arteries. But how, in its turn, is this primitive sanguineous system of the embryo formed? In what order and number are the vascular trunks manifested? If, as we have just said, there are two vascular demi-layers—the one on the right side and the other on the left, enclosing the space in which the embryo becomes developed,—we may conceive that each demi-circle should send a vein from its superior part, which will be the continuation of that part of the proto-genial arch; a second vein from its inferior portion, which will also be a continuation of the inferior arch of the great proto-genial demi-vein; and lastly, a third vein and an artery, which will set out from the middle part of each demi-layer, to proceed towards the middle portion of the young embryo. There will thus exist three great veins and an artery on each side. The symmetry and duality will thus be perfect, resulting, as we have seen, from the peripheric or centripetal order of developments. Now this second period of formation of the primitive sanguineous system is so clear in its manifestation, so exact in the order and succession of the parts which constitute it, so apparent, by reason of the relative size which the embryo has already acquired, that one can trace all its stages and, so to speak, all its shades of development, by the coloration which the vessels assume as soon as they appear. Thus we see, in the first place, the two superior arches of each proto-genial demi-vein become continued upon the anterior surface of the embryo, and give birth to two large veins named *descending*, because they, in fact, descend upon the embryo. In the second place, we see the inferior arches of the proto-genial demi-veins become prolonged like the superior, and produce in their turn two large veins called *ascending*, because they proceed in a contrary direction to the preceding. We see, lastly, the veins and arteries from the middle of each vascular demi-layer produce a large vein and a large arterial trunk on each side; an artery and vein which penetrate into the middle of the embryonic mass, in the same manner that the descending and ascending veins have penetrated above and below. Each circular demi-vein in this manner forms an entire circle; so that we have really two vascular circles, in the midst of which the embryo rests. These two primitive vascular circles seem to be destined to the formation of the heart, the principal organ of the developments of the vascular layer. We are thus led by the very progress of the formations to the study of the primitive state of this organ. *A priori*, we should say that the heart was double; that there must be a demi-heart to the right, corresponding to the right vascular demi-circle, and a demi-heart to the left, corresponding to the vascular demi-circle of that side. This arrangement is, in fact, a consequence of the foregoing. But, as we have previously said, let us reject from the consideration of this subject all *a priori* deductions and come to the direct observation of facts. Now here, again, direct observation is so conclusive, that no doubt can be left upon the mind. The heart commences, in fact, by two cardiac vessels placed obliquely upon the fore-part of the embryo, and isolated one from the other. One of these vessels is placed in relation with one of the vascular circles, and the other with the opposite circle. Each of these circles has thus a counterpart in the primitive duality of the heart. But the cardiac vessels are, at first, in relation with the venous system only of the vascular circles: the two umbilical arteries, so named because they join the embryo towards the point which the umbilicus ought to occupy, seem unconnected with its formation. What purpose then do they serve? What function do they perform in the development of the embryo? Their office is to constitute the aorta, which, at a subsequent period, forms, as it were, a prolongation of the heart, extending

throughout the entire trunk. But if the heart is double, if each venous circle has produced its cardiac vessel, each arterial circle should on its side produce a corresponding aorta. There will then primitively be two aortæ, as there are two cardiac vessels. These two aortæ will be a necessary consequence of the duality of the umbilical arteries, as the two hearts are a consequence of the duality of the descending and ascending veins, and these latter a necessity of the duality of the proto-genial veins, which themselves are dependant on the primordial duality of the germinative layer. We may also remark, that these two aortæ correspond to the two halves of the spinal marrow and of the brain; to the two halves of the vertebral column of the cranium, and to those of the face; and lastly to the two halves of the osseous and of the muscular systems. Duality is found, then, every where existent. The arteries and veins which are single in the adult, are primitively double, as well as the aorta; there are two superior, and two inferior venæ cavæ, two venæ azygos, two middle sacral arteries, two anterior, and two posterior spinal arteries, two arteriæ callosæ; in fine, two symmetrical halves of the sanguineous system to contribute to the development of the two halves of the animal.

Before passing to the primitive duality of the organisms arising from the mucous layer, we must say a few words on the law of decussation of the sanguiferous system. If we search in the history of embryogeny for the reasons which have led to the supposition that the vascular system was produced by the gradual action of the heart, which had hollowed for itself, as it were, the routes through those parts which the blood had to traverse, we shall find them partly in the superficial arrangement of the arteries and veins, and in their feeble adherence to the organs, which renders them almost floating. Now, with such great mobility, could the vessels be maintained in place during the progress of development? How could they preserve their necessary relations? Every obstacle encountered in the study of organogeny thus led to the creation of some hypothesis which diverted the attention from that direct observation, which alone could explain away the surrounding perplexities. But if, instead of confining themselves to conjecture, those investigators had consulted nature, they would have found a solution to this difficulty in the double decussation which takes place in the vessels of the sanguineous system. In the plane superior to the umbilicus, the veins are anterior and the arteries posterior; in the plane inferior, on the contrary, the arteries are in front, and the veins behind. From this decussated arrangement, it results that the arteries are maintained in place by the veins above, whilst below, the veins are kept in position by the arteries. Hence is the fixity of relations preserved by this double arrangement.

The nearer we approach to the internal parts of the embryo, to those formations proceeding from the mucous layer, which is placed in direct apposition with the vitellus, the greater difficulty do we find in ascertaining the primitive organic duality. What a length of time elapsed before the discovery of the two intestinal folds of Wolf? And what weight could be attached to this intestinal duality when compared with the primitive organic unity supposed to be every where present along the median line? Was it not rather to be regarded as a digression of nature? This new principle, however, thus established by direct observation in opposition to all pre-conceived notions, eventually led to a total revolution in ideas on this subject; so that nobody, now-a-days, doubts a fact which a short time since all the world rejected. There are, in fact, two primitive intestines, which, as we shall elsewhere show, are developed in three distinct zones. From each of these intestines we have proceeding, on either side, first, the salivary glands; secondly, the lungs; and thirdly, the pancreas and the liver; for there are primitively two livers, two pancreatic glands, and perhaps two spleens. Each primitive intestine bears with it the rudiments of the organs, which, by their re-union, constitute the digestive canal and its appendages. Whether the genito-urinary organs arise from the mucous layer alone, or from the mucous and vascular layers combined, their original duality is plainly marked throughout the whole extent of this apparatus; the one-half is on one side, and the other half on the other side. But, what, according to our views, gives to the study of this system a peculiar interest, is that it has two peripheries and one centre; that it has consequently double organs at its circumference and single organs in the middle. The duality of the parts which are at its periphery has never been doubted; every one knows that animals have two kidneys, two testicles, and two ovaries, which precede the Wolfian bodies in embryonic life; every one knows, in like manner, that at the other extremity of the apparatus, there exist two tunicæ vaginales, two scrota, two labia majora, and two labia minora or nymphæ, two clitorides, and two penes, the primitive type of which is represented by the two corpora cavernosa of the adult; but we know also that in the highest sphere of animality there exists but one uterus, one bladder and one urethral canal. It is, then, the original duality of these latter organs which the law of symmetry should demonstrate. Now, the duality of the uterus has been already shown in our previous lectures; we have then merely to point out that of the bladder and of the urethra. This duality of the bladder has its source in the origin of the allantoid, so well characterized by M. Dutrochet under the name of the ovo-urinary bladder. The double bladder which, in the commencement, constitutes this embryonic covering, is a prolongation of the intestine, which gives birth to the allantoid below by an analogous development to that which has produced the lung above. With respect to the duality of the urethral canal, the two layers which constitute it proceed from the inner part of the rami of the pubis, and being at first united above so as to form a kind of arch, become converted into a canal by their intimate union lower down.

The mucous layer of the germinative sacs being the most internal of the three, as well as the last to enter into action, we may conceive that the centripetal law, and the law of symmetry, will be less marked upon its organisms, than upon those of the other layers, by reason of the close connexion in which the primitive halves of the organs will be found. Hence we may imagine that it will be principally upon these organisms that the objections which have been raised against these laws of development will be founded. But if we had time to enter into these details, I could have shown you that the structure of the ovaries and of the testicles, for instance, takes place from without inwards; I might especially have dwelt upon the formation of the ureters, which, starting from the kidnies, are so manifestly directed towards the bladder, that one might trace in them the various stages of the centripetal law. Still, among the objections made to the law of symmetry, there is one which appears so decisive from the consideration of certain adult animals, that I cannot pass over it in silence. If, it is said, the duality of organisms be a general law of developments, how is it that the greater part of the *ophidiæ* among reptiles, have but one lung,—and all birds but a single ovary? what has become of the second ovary of the bird, and of the second lung of the *ophidia*? Now the answer to this is, that all the *ophidiæ* have two lungs at birth, and all birds possess two ovaries throughout the whole course of incubation, and often beyond this term; but from some reason of which we are not cognizant, after the birth of the *ophidia*, one of its lungs wastes away and disappears; so in the bird, the right ovary which is manifest at the sixth day of incubation, and goes on increasing up to the fourteenth, begins to be atrophied about the seventeenth day, and completely disappears within a few weeks subsequent to its being hatched. The symmetry which, in this respect, characterises the embryonic life of these animals, is gradually effaced after their entrance into independant existence: they lose the regularity of conformation which they possessed, and assume irregularity. This pretended objection is then, on the contrary, a beautiful verification of the rule. Now, as we have shown that the law of symmetry is a necessary consequence of the original duality of the germinative sacs, our next point is to establish that the *law of conjugation*, which reduces this duality to organic unity, is in its turn but a consequence of the law of symmetry. We shall thus have presented to view, the cause of the duality of the animal as well as that of its unity,—causes essentially dependant on the centripetal law of developments.

If, in their primitive condition, we have found the constituent elements of the organisms divided and sub-divided *ad infinitum*, we have, also, seen in the *law of homœozygy* the commencement of that principle of association which combines together these elements so as to constitute the materials of the organs which we have denominated *organites*. If by the law of symmetry we have been enabled to understand the general rule of dismemberment of these organites, of their disassociation in pairs at the moment of their appearance, so, by the law of conjugation, shall we learn the rule or mechanism of their association, when the organites, or even their elements, are drawn towards one another, and brought into contact. Hence, it follows, that the law of conjugation is but a reduction to rules of the principle of association. Now, the effect of this law of conjugation upon the organisms, is to do away with the duality of those which are seated upon the median line, to unite and incorporate them in such a manner as to produce upon this line the fusion of the two halves of the embryo, and thus constitute a simple system. In the organs themselves, we may trace the result of this principle in the development of their proper structure, in the source of those eminences and depressions which are visible upon their surface, in the grooves which surround them, in the foramina which perforate their various parts, and in the cavities which are produced in their true structure, or which they commence to form by their re-union. In fine, there is not a duct or canal running through the substance of an organ, but what originates in this general principle of the conjugation of organisms.

Use of the Stethoscope in Fractures.—Lisfranc considers the stethoscope of the greatest utility in the diagnosis of obscure fractures; and that with its aid there can scarcely ever remain a doubt whether a bone be broken or not. When the stethoscope is applied to the fractured part itself, it is almost a matter of indifference whether the plug be retained or not; but when it is applied at a point distant from the seat of fracture, the crepitus will become more distinct if the plug be previously removed. The more superficial the bone, the louder will the crepitus be. It is always most distinct just over the fracture, but can be distinguished at a considerable distance from it. It is much less distinct when there is a riding of the extremities, but is rendered more so by extension and counter-extension. The fragments of the compact bones furnish sharp, grating, crackling sounds, which, heard through the stethoscope, distress the ear by their loudness. The fractured spongy bones give a duller sound, interrupted from time to time by a louder one, resembling that just mentioned. Oblique fractures produce a stronger crepitus than the transverse. The effusion of fluids around the fracture is indicated by a sound resembling that made by a foot in a shoe full of water. When the fracture is more or less comminuted, there will be heard, in addition, a sort of crackling, as of hard angular bodies rubbing against each other; if it be a compound one, the crepitus is accompanied by sounds resembling those produced by making forcible expirations and inspirations, the mouth being kept wide open the while. The sound produced by dislocated bones is slight, limited in extent, and dull, and the sliding of the tendons in their sheaths, produce full, dull, interrupted, and unfrequent sounds, very unlike those resulting from a fractured bone.

REMARKS ON SOME OPINIONS OF NERVOUS SYMPATHY.

By T. Wilkinson King.

For the 'Medical Times.'

Sir C. Bell. in the year 1816* put forward a considerable variety of illustrations of sympathetic pains and actions, with the endeavour to establish the direct nervous tracks (not medullary) by which the effects are produced. Our only reason for taking up this work is, that it affords at once a simple means of suggesting correction to some errors which still prevail, and an opportunity of recommending views which are not much advocated.

We shall proceed briefly to quote Sir C. Bell's reflections on the successive plates of the work referred to, with such limitations and remarks as seem necessary. If there should appear a want of completeness in this method of treating the subject, we may be excused for being unwilling to repeat what has been already advanced elsewhere, as some subjoined notes will sufficiently indicate:—

"The fact that internal irritation shews itself by external pain, is of the first consequence in ascertaining the place and nature of disease. The explanation of this circumstance may be attempted hypothetically thus. Draw a nerve, A, distinguishing its filaments by parallel lines; represent this nerve diverging in branches, B. to the parts internal, C. to parts external. When morbid irritation affects the branch, B, it will not be felt in the seat of the complaint, but in the parts to which, C, the cutaneous or external branch is sent. This in fact holds universally; pain actually seated in the eye, throat, heart, lungs, and stomach, great intestines, uterus, and testicles, is announced or accompanied by pains external; that is, in parts to which the corresponding cutaneous nerves are transmitted." There seem to be at least occasional exceptions to this conclusion. It is by a kind of false experience that languor or uneasiness in the long muscles of the hand seems actually located in the palm and fingers, and perhaps an internal pain, that we cannot locate distinctly, may seem to the sufferer to be superficial in the case where different branches of one sensitive nerve supply a superficial and internal part. It is curious, however, that the author speaks of the nerve B to the internal part as "Not being a sentient nerve." Diseases of the heart and lungs, and others of the abdomen produce no pain.

"The sympathetic nerve ascends to form connections with the fifth, sixth, and seventh, and establish a correspondence between the operations in the lower cavities and the organs in the head. Hence those sensations in the head indicative of disordered bowels:—some amaurosis, noise in the ears, errors of smell, rheums and pains in the frons and occiput, irritation of the nose, grinding of the teeth." These symptoms may be all referable to disorder of capillaries in the part or its nerves. Grinding of the teeth† seems a true excito-motory act. Pain in the ear from disorder near the root of the tongue may be rather a false experience, and cough from tickling the ear an excito-motory act. Pain in the occiput with an ophthalmia is not more or less obscure than the same pain without ophthalmia.

It is broadly stated that "affections of the brain and sometimes disorders of the bowels deprive the patient at one time of taste, at another of speech, or at another of swallowing." At present we simply dispute that disorders of the bowels can do any such thing. The nerves of the throat offer many examples of true excito-motory acts, and these facts following one another in just, happy and needful succession, as it were by consent, may still depend solely on the cerebro-spinal and excito-motory organ in particular. With respect to involuntary muscle, extension alone may be the exciting cause of its contraction; and possibly there may be a third intermediate mode of excitation as by sympathy or consent.

a.—Disorder of the stomach deranges the secretion of the larynx.

b.—A vomit or nauseating medicine will loosen the viscid secretion of the larynx and pharynx.

c.—Disorders of the stomach acting through the pulmonic plexus will occasion cough; and medicines acting on the stomach will alleviate asthma.

Now is it not much more evident that, according to the results of digestion, will be the nature and quantity of secretion; that the blood influenced by its ingredients, whether derived through the stomach, the rectum, the skin or transfusion, determines secretion in the same way, and relieves oppression, secretion, and cough, by determining capillary actions, and depletions more generally.

"When life seems extinguished by suffocation in experiments on animals, pricking the heart will be followed by respiration." "And in the apparently drowned beings the play of the lungs, in artificial breathing, brings after it the action of the heart." Is it not more probably true that the heart still acting occasionally (partially and feebly) is enabled to act by becoming more equably filled and arterially injected? For in dying it would appear that the left heart contracts permanently through emptiness, while the right is dilated.

"Torpor of the bowels and accumulation in the intestinal canal affects the mind, obscures every happy vision, and induces a sombre and melancholy cast of thought. The mind and viscera mutually influencing each other, produce hypochondriasm. In the hypochondriac's feelings all is not imaginative. Pains and odd sensations, attributable to external and remote parts, do actually proceed from the disturbance of internal nerves." Surely a proportion of all these affections may by possibility belong to disorder of the blood, whether for their rise, or course, or consequences.

The intercosto-humeral nerves being affected in their course, pains arise towards their distribution, and so also the intercostals and all other sensitive nerves.

The pains of angina I have before attempted to explain.* "Pain in the left shoulder from rupture or inflammation of the heart, from pericarditis, or from blood in the pericardium" requires vigorous depletion. We feel aching on the right or left shoulder, and apply the hand, but become very sensible that we do not reach the part.

"I could furnish several examples of paralysis of the muscles suspending the shoulder from disturbance of the bowels. This is a circumstance not easily credited, until we recollect that in the colica pictonum, and in other disorders of the bowels, even more partial defects of muscles will be exhibited."

Lead in the blood may poison the much used muscles of painters, but all the worst known diseases of the viscera cause no paralysis without nervous disorganisation.

"A pain like rheumatism will be produced in the thigh and testicle by fœces in the colon.

"Pain actually seated in the testis or uterus is referred to the loins." It must be confessed that in a very great many affections, pains are referred to the loins or back, though in most cases very indefinitely, or without distinct limits.

"Disorder in the bowels produces cramp in the muscles of the leg." Setting aside affections of the rectum, cramp of the limbs, &c., as in cholera, may depend on the same morbid blood as the looseness of the intestines.

"Cold water thrown on the legs promotes the action of purgatives; warm bathing of the legs soothes the intestines." Cold generally retards the functions, though it may induce a diarrhœa, and warmth frees most functions, and consequently relieves an oppressed one.

The doctrine of sympathy in disease, and especially where no pain exists, seems much more naturally connected with the blood than with nerves. When the body is developed, the surplus of material is ready for generation; when the child is born the excess of nutrition is disposed of by the breasts; when generation fails, polysarcia and fungus, and epischesis are liable to be produced; when one function of nutrition or secretion fails, others are excited, or when one is excited others fail; and this is only a glimpse of countless capillary sympathies.*

36, Bedford Square.

* See a series of engravings explaining the course of the Nerves, with an Address to Young Physicians on the Study of the Nerves, 4to. London.

† We have previously endeavoured to determine the proper value of various sympathetic (?) influences in a Paper on the Nature and Treatment of Common Tooth Ache, as illustrative of general principles in pathology and therapeutics.—*Lond. Med. Gaz.*, Jan. 1842.

* Vide Physiological Reflections on the Nature and Treatment of Angina—*Seven Papers in Med. Gaz.* 1841.

* See First General Laws, or Fundamental Doctrines of Medicine and Surgery, by T. W. King, London, 1841; and also a Paper on Disorders which are Variable, and on the Practical Inferences which are Deducible from the Character of Changeableness, by T. W. King, Guy's Hospital Reports, No. XI.

THE SANATORIUM.

(To the Editor of the "Medical Times.")

Sir,—I grieve to find that there is in the minds of some medical men, a strong prejudice against an institution called the "Sanatorium;" and that a supposition has existed that it is calculated to deprive the general practitioner of his patients, and to place them under the care and treatment of strangers. Such ideas are erroneous; and feeling that the dislike displayed towards it by some, arises from a misunderstanding of its nature and purposes, I venture to place its real object before the profession through the medium of your widely circulated and still extending journal.

First,—Its purport is to furnish a well-ordered home in the hour of sickness to such as are apart from their friends in lodgings, inconvenient both from their situation and internal arrangement for the due treatment of sickness. To provide good nurses, unadulterated drugs, baths, and such other conveniences as the case may require.

Secondly,—To provide an abiding place more suitable than an hotel to such as may be compelled to quit the provinces for superior medical or surgical advice, or to undergo operations.

Every medical man is free to treat his own patients, and is invested in every respect with the same authority as the physicians and surgeons in immediate connexion with the establishment, and a deduction from the weekly payment of the inmate so attended, is made in his favour. What then is, or can there be, calculated to offend? To a medical man, whose first great object is to cure his patient, who recognises the true dignity and worth of the profession to which he belongs, who feels with Cicero that "Homines ad Deus nulla re proprius accedunt quàm salutem hominibus dando," who is desirous of employing every means which science has revealed for the benefit of the sufferer, to place him in short within the reach of those conditions which are essential to the mitigation and removal of functional derangement, will, I am sure, be hailed with approbation. It is well known, that in private lodgings, in the close, dark, confined streets of the city, there are not the means at hand to counteract the most common of diseases. The sick individual is wholly at the mercy of a poor menial whose time is fully occupied, and whose scanty experience ill qualifies her for the duties of the sick-room, or even for the supply of such dietetic articles as the wants of the patient may demand. Her multitudinous engagements, such as running errands, cleaning the stairs, blacking the shoes, making beds, polishing kettles, answering the bell, scouring the grates, peeling potatoes, bringing up the coals, and a hundred other duties compel her to neglect him, let her disposition be ever so kind. The hour of administering the medicine is frequently forgotten—the glass in which it is poured goes long unwashed, and thus the "debris," which the nauseous taste generally causes to be left be-

hind is exposed to decomposing influences, and deteriorates and changes the next dose administered. The vessels of the room are too long neglected, and thus the place from its position imperfectly ventilated is rendered still more poisonous by the exhalations going forward, and contributes to the depressing influences of fever the langour and irritability dependent on the inhalation of a noxious atmosphere. The medical man may visit once in the 24 hours, but who is there to detail the symptoms which have transpired in his absence? What kind hand has smoothed the pillow—what anxious mind has watched the effects of the medicine—what friendly eye hath marked the varying phases of the malady, the restlessness or the quietude which have been felt in that long interval? Cunning may answer questions and a desire to conceal negligence omit the truth, but amid this uncertainty what accuracy a few minutes of observation ensure to the medical man? Again, if a nurse be hired, to say nothing of the uncertainty of her qualifications, she comes as a stranger into a house of whose internal arrangements she knows nothing, and is obliged to appeal to the landlady for everything she may require; while too frequently it occurs that each article she wants in the shape of saucepan or spoon is already in requisition for the general purposes of the household. The landlady's equanimity being disturbed through her fears lest other lodgers may be alarmed by the sickness of the one in question is not always very accommodating — this reacts upon the nurse, who, to avoid appearing troublesome to the person who hired her, omits many things which she would otherwise ask for, and thus again additional inconvenience and suffering fall to the lot of the poor patient. If he dislikes the nurse—he fears to discharge her, for he is helpless, and knows not where to look for another—while it too frequently happens that the nurse and the landlady connive together—and thus redress is almost put beyond the reach of possibility, and on the strength of this feeling, many have tolerated the fumes of gin—the deep-loud snore, and such neglect as harrow the soul to think of! If baths are wanting there are none at hand, but there are features which tell too plainly, that such extra wants are deemed wearisome. What must be the feelings of a sensitive mind under such circumstances! What dreadful fears must pass through the feverish brain! Far, far from home, from sisters, from friends, from neighbours, in the hands of strangers, who feel that his illness is injuring *them*—who are anxious for his removal—who anticipate no want—whose visits "are few and far between" from the press of other business, who stand afar off, even when they do come, from fear of contagion, and whose faces manifest the troubles of disappointment and regret, how must his heart sink within him! How lonesome, how desolate must he feel! how terribly must the disease of the body be aggravated by the agony of the mind! The evils described are the results of omitted duties. The sins of commission are not of less magnitude. The nurse is sometimes too officious. She has medical views of her own—knows of something that is "good for a fever," and possesses a "capital cure for a cough."—"Has no notion of people being starved by the doctor," and is convinced that "there is nothing like a drop of gin," &c. &c. It has recently occurred to the writer of this letter to have his patients seriously injured in this way. A gentleman suffering from pneumonia for which he had been bled, and was getting better, was persuaded by his nurse to take "Friars' Balsam" as being a good thing for a cough. He took it—felt a little relieved—his spirits became more animated—his cough was less—he repeated the dose again and again; bye and bye, increased heat, pain, and restlessness came on, the patient grew delirious, and under this state of things, the writer was sent for, and found to his surprise the above symptoms where he had every reason to expect a speedy convalescence and cure. The other instance occurred after a case of trephining. The patient was proceeding most satisfactorily for three days, subsisting chiefly on water—no fever of importance—nothing untoward had transpired, when the officious attendant chose to abandon that starvation system, as she called it, and gave the sufferer *brandy and eggs!* Frightful delirium immediately set in, which required the most active treatment to subdue.

To avoid such evils is one of the purposes of the Sanatorium. The advantages of an institution expressly fitted up for medical purposes, over the noise and bustle of a public hotel for the second class alluded to, are too obvious to need comment. Such is a brief, but faithful, epitome of the character and object of the sanatorium, and what is there calculated to excite the dislike of a benevolent and liberal profession? To surgeons who are anxious respecting the result of an operation, and to the medical practitioner who is desirous of minutely watching the effects of any particular kind of medicine, diet, or bathing, so far from being an injury, it offers advantages which no private lodgings could be expected to bestow. It attempts not to encroach on the province of the medical man as the attendant on families, but is founded to supply a quiet resting place in the hour of their helplessness to the overworked student, the sensitive artist, the sick governess and all such as circumstances have called from the endearments of home, and have no claim for extra-attendance from those under whose roof they dwell! In short to furnish an asylum removed from the noise of never-ceasing feet, the roar of waggons, and all the discordant cries which rack the feverish brain, to such as are ill, and solitary "amid the crowd, the hum, the shock of men.

"With none who bless them, none whom they can bless,"

and who, from the sensitiveness which education hath bestowed, have been led to adopt in all its bitterness the language of the poet, to cry

"Dearly bought that hidden treasure,
Finer feelings doth bestow—
Chords that vibrate sweetest pleasure,
Thrill the deepest notes of woe.

Yours, &c.
A CONSTANT READER.

MR. CLENDON'S FORCEPS.

To the Editor of the 'Medical Times.'

SIR,—I last week sent you a letter requesting you to inform your correspondent, "that having already disclaimed *originality* for my forceps, and all knowledge of the paper in the *Medical Gazette*, I must decline further correspondence, as I had neither leisure nor inclination for a weekly controversy; neither did I think your correspondent could reasonably expect it, when he was told that Mr. Tomes had taken up the subject, and published his own version of the affair, and to which I had also replied."

As you decided after this, on publishing his letter, I much regret you did not at the same time insert mine as I requested; this would have saved me the trouble of addressing you again, and your readers the infliction of a long and uninteresting letter.

After the disclaimer already given—yielding, in order to avoid jealousy and strife, the share of credit to which I am justly entitled—I have been urged, again and again, not to condescend to further explanation. I am unwilling, however, that those who do *not* know me should imagine my silence proceeds from inability to reply. I trust, therefore, the explanation I am about to give will be satisfactory, and quite free from the malevolent feeling which forms so prominent a feature in your correspondent's letter. I cannot be expected to follow him through his illogical deductions from falsely assumed facts, but I will address myself to the main point at issue. The objectionable passage in my work appears to be this, "accident at length introduced to my notice an individual who readily carried out, and it is due to him to acknowledge improved upon my suggestions."

I was recommended to Monsieur Evrard as a forceps maker, by my friend Mr. George Ash—a gentleman well known and highly respected in the profession; he had seen some of Evrard's work and spoke highly of it. In consequence of this recommendation I called on Mons. Evrard, and desired him to make me a set of forceps suited to the different descriptions of teeth. He shewed me a pair, and this was the only pair I saw, or I believe he had by him, well fitted to the superior molares: to these I positively objected—the handles being wide apart and curved, and the instrument calculated to remove teeth from the *front* of the mouth; I ordered mine to be quite straight, so as to be used at the *side*. Those for the front and side teeth, I also ordered straight, with one blade longer than the other, for the reasons pointed out in my work. Two pairs were made for the lower molares, and on trial found to be *useless*. I paid for them nevertheless. The elevators I ordered to resemble one blade of the different forceps; the length of the blades and handles, the curvature of the handles, the width they were to open, were all according to my directions; the *fitting* and *finishing* of the instrument I left to the maker, and in this he succeeded beyond my expectation, and for this I have given him full credit. Instead, therefore, of going into this person's shop, and finding instruments ready to my hand, as your correspondent would have you believe, every pair were made expressly for me, after my own directions, the completion of the order occupying several months. The subject occupied much of my attention, and I knew no other person in the transaction than the maker. Evrard says, he told me he had previously made forceps for Mr. Tomes. He might have done so—I believe he did mention the names of several he had made instruments for, but as I know none of them, even by name, it was not likely to make an impression, and it was long after this period that I first knew who and what Mr. Tomes was. I went to the maker with a specific object, as the friend who recommended me well knows, and this object he carried out according to my instructions;—what he did for me was only a workmanlike adaptation of a *principle* long *previously known*, and *not an invention*. Will any one venture to claim it as an invention, or even as an original proposition? Will Mr. Tomes? If so, competitors—to each of whom *some* credit is due, will start up more numerous than the cities which claimed the honour of giving birth to Homer;—I am even prepared to *produce instruments* of various dates which will disprove it. So fully was I impressed with this feeling when I wrote my 'Observations on Extraction,' that I was most anxious—as the friend before alluded to can testify—to say nothing calculated to excite the jealousy of those whose attention

had been directed to the same object. To disarm even the most captious, I appended the following note to my description of the generality of forceps,—"I am well aware that during the last few years, dentists have given their attention to the construction of forceps, and suggested a variety of improvements in their form; on the merits of these, chiefly confined to their own practice, or but imperfectly known, I do not presume to offer an opinion, my remarks refer to such as are usually found in the shops of the makers, and supplied to the medical profession at the present time." After this, did Mr. Sheppard feel himself aggrieved? or Mr. Fay, or Mr. Snell, or Mr. Sinclair, or Mr. Lintott, and many others I *could* have named, but did not. Then why should Mr. Tomes?

Your correspondent has fallen into another error, which I wish to correct. He assumes that "as I intended to write a book on tooth forceps, it was my duty, &c. &c." Had he read the book with a view to improvement instead of finding fault, he could not have failed to discover it was written, not to recommend a particular form of tooth forceps, but to point out the evils attending the usual mode of extracting teeth with the key, and to recommend another which possessed great and manifest advantages.

I now take my leave of this unpleasant and unprofitable discussion; I do not expect to have the last word, neither do I desire it. I offer no apology for the length of this letter, as I am sure you and your readers will do me the justice to acknowledge that the controversy was none of my seeking.

I am, Sir,
Your obedient Servant,
J. CHITTY CLENDON.

15, Conduit Street, Hanover Square,
May 15, 1843.

MEDICO-CHIRURGICAL SOCIETY.

Observations on the Medicinal Properties of Indian Hemp.

Dr. John Clendinning read to the Medico-Chirurgical Society, a paper on this subject.—After having referred to numerous examples of the successful use of opium in acute and chronic disease, he adverted to the inconvenience occasionally attending the employment of opiates, especially to the derangement of the stomach and bowels, and kidneys, and the vertiginous and other painful conditions of the nervous system they so frequently produce; and he then stated that in his experience, those inconvenient effects had occurred so frequently, and had been found in many cases so difficult to obviate, without the abandonment of the use of a class of remedies of the utmost importance in a large number and variety of diseases, that he had been recently induced to make trial of the extract of hemp, recommended by Dr. O'Shaughnessy, of Calcutta, as a substitute for opium in numerous instances.

The author's object in making this communication was to bring under the notice of the society the results he had obtained, as in his judgment important to made generally known, with a view to further and more extended trials by other practitioners, more especially at this moment, when there was some prospect of a new edition of the London Pharmacopœia, upon which he understood a committee of the Royal College was actually engaged.

The author then gave details of eighteen cases from a much larger number in which he had given trial to the new remedy with satisfactory results. These trials included cases of acute and chronic disease, and persons of both sexes and of various ages. The number of cases detailed, although necessary to substantiate the claims advanced by the author in favour of the new narcotic, was yet such as to preclude any analysis of them in this place. It will be sufficient to say, generally, that the indications for its use in these cases appear to have been more especially to relieve neuralgic pain; to relieve irritation and spasms of chronic bronchitis, of rheumatism, &c., and to subdue sleeplessness or disturbed rest, from whatever cause, if not arising from inflammation in the head. The author found the remedy highly useful in checking cough in phthisis, and cramp and irritation in the limbs, &c., in rheumatism, without any interference with the digestive processes or intestinal action or secretions, yet with an anodyne and hypnotic effect not less uniform than that of opium. He gave it trial, also, in several cases of low fever, characterised by spots, tremors, and delirious restlessness, and with very good effects. It repressed delirium and conciliated repose, and thus secured that tranquillity and refreshment, the proper effects of sleep. He reported, also, some instances of the successful use of hemp extract as a pure anodyne to secure sleep, by suppressing pain arising in one case from a cut, in another from a violent purgative, and in a third from rheumatic irritation of the meninges.

The author concluded his paper by a *resume* of the objects of his trials, and the results and conclusions he had attained. He stated that his experience had satisfied him that the hemp extract was possessed of medicinal properties sufficiently energetic and uniform to entitle it to admission into our national Pharmacopœia, amongst our useful narcotics; and that as a substitute for opium, especially in cases for which that drug was unsuited, owing to the idiosyncrasy or to the presence of active indigestion, or the nervous temperament, he had found reason to place much confidence in the extract, and to regard it as a remedy exceeding in value that of any other narcotic or combination of narcotics with which he was acquainted.

On the Removal of Blindness depending upon Palsy of the Iris. By A. Ure, Esq.

The author described the case of a female patient who had come under his care at the Western Eye Dispensary in consequence of having been suddenly attacked with blindness in one eye. The pupil was dilated and immoveable, and she was wholly unable to distinguish even light from darkness. Judging the case to be one of idiopathic palsy of the iris, the author proceeded at once to employ the method of cauterising the circumference of the cornea by nitrate of silver, first proposed by Serres. The result was prompt restoration to sight. He pointed attention to the importance of discriminating accurately between palsy of the iris and amaurosis, since the treatment which is so efficacious in the one would be no less improper than useless in the other.

On the Sugar in the Blood in Diabetes. By Dr. Bence Jones.

The very delicate test for grape-sugar which was communicated to the Academy of Sciences in Berlin, in 1841, by Professor Mitscherlish as the discovery of Herr Trommer, was applied by him without success to the examination of diabetic blood. He found, however, that if one ten-thousandth part of grape-sugar was mixed with blood, the test would indicate its presence. The opportunity occurred to the author of this paper of repeating the experiment on the blood of a diabetic patient of Dr. Nairne's, in St. George's Hospital. The disease was of about a year's standing, and the patient was, in other respects, in tolerable health. On the 24th of January, 1843, he was bled to twelve ounces, after a dinner of bread and meat. The following morning the blood was well separated; the serum milky; the clot slightly buffed and cupped; specific gravity 1029.7. The serum became clear when treated with ether, and the test for grape-sugar gave a negative result, as the precipitate, which first formed, did not redissolve, and only became much darker when heated, partly in consequence of the deep purple-colour which is formed by the action of caustic potash and sulphate of copper on fibrine or albumen. The albumen was therefore removed by evaporating the serum to dryness in a water bath. The residue was finely powdered, treated with water, filtered, and tested for grape-sugar. The characteristic changes then took place. The clot of the same blood was treated in the same way, and the test showed that grape-sugar was present in it also. The urine passed between three hours before the bleeding, and five hours after, was five pints, specific gravity 1031.3, and when tested by the same method the liquid first became deep-blue and then a very large precipitate formed, which was at first bright-yellow, and after some hours became dark-green. Uric acid alone does not form the clear blue solution, although when boiled with the potash and sulphate of copper, it will produce the same coloured precipitate as the grape-sugar does.*

MEDICO-BOTANICAL SOCIETY.

May 11th.

H. Gibbs, Esq., in the Chair.

A communication from Dr. Houlton "on the collecting and preserving roots for medicinal purposes" was read. The discordant opinions found amongst medical practitioners and authors respecting the medicinal properties of indigenous vegetable remedies may be attributed in a great measure to want of information respecting the method of collecting, preserving, and manipulating these very important articles; as pharmaceutists have no sound practical guide to direct them, there is a great want of uniformity in their preparation, and consequently in their properties. To remedy this was Dr. Houlton's object, by laying down some safe rule for collecting and preserving roots. The directions contained in the London Pharmacopæia he condemns as uncertain and erroneous, and further shews that the instructions for the same purpose contained in the work of Dr. Bellingham and Dr. Mitchell are incorrect. He observes that *all roots should be taken up at the time that their leaves die*, as they then abound with the proper secretions of the plant. This rule has no exception: it applies to the roots of trees, shrubs, herbs, rootstocks, bulbs, cormi, and tubers; and it includes the curious plant, colchicum, whose flower only appears in the autumn, and its leaves and fruit the following spring and summer. Biennial roots must be taken up in the first year of their duration, as when the leaves decay in the second year, their roots are either decayed, or merely dry woody fibre. Roots intended to be preserved should be dried as soon as possible after they have been dug up; the large true roots, especially the more juicy ones, dry better in their entire state than when sliced.

Bichloride of Mercury.—M. Soubeiran speaks highly of Dr. Thomson's plan of preparing this salt by the direct action of chlorine upon mercury, but M. Gaulthier de Claubry considers it of but little advantage, and exceedingly tedious. He prefers obtaining the salt by precipitating the proto-nitrate of mercury by hydrochloric acid, and then dissolving the precipitate in aqua regia.

Palm Oil.—Palm oil set aside, but exposed to the air, is gradually changed into a fatty acid and glycerine. This remarkable metamorphosis takes place without the intervention of any metallic oxyde, and must doubtlessly be attributed to a small quantity of organic matter, the chemical nature of which has not yet been examined.

Intestinal Calculus.—M. Deschamps, of Avallon, had a hard ovoid body sent to him by a patient, who, after long suffering from pain in the region of the liver, had passed it by the anus. Its weight was 10 grains, its surface tubercular, its color a deep green, its odor

* The above are the secretary's abstracts.

that of fæces. The concretion was powdered, and after having been washed with boiling water, and dried, it was treated with boiling alcohol, which, on cooling, yielded cholesterine. This was washed, and re-dissolved; then it formed beautiful white crystals. The mother-water was of an amber color, and very acid: it had a very strong fæcal odour, and when concentrated, yielded a little cholesterine. The residuum of the calculus was partially soluble in water alcalized with potass, and the liquid had a brown greenish yellow color: filtered and supersaturated with nitric acid, it presented all the colors that the coloring matter of the bile assumes, under the influence of that agent. The yellow cyanuret gave a slight precipitate in a part of the liquid which had been acidulated with acetic acid. The portion of the calculus left by the potass, dissolved in acids with effervescence, and the filtered liquid was not precipitated by ammonia, but by the ammonic oxalate. The calculus contained other principles, which were not discovered, besides the cholesterine, the colouring matter of the bile, carbonate of lime, and traces of albumen.

TO CORRESPONDENTS.

Humanity *asks the following questions:—"Has a surgeon a right when sent for to attend a poor woman in labour, to refuse, or upon entering the house to demand his fee, or security that it shall be paid—say half a guinea—and if not paid before he quits the house, or within the week, that fifteen shillings shall be paid, as a forfeiture for the non-payment of the half guinea as stipulated within the week?" No. "Have surgeons in any cases a right to refuse attendance, when not otherwise engaged, and to refuse giving their assistance when called upon, without being secured in the payment of what they may demand for their professional exertions?" Yes. A modified right governed by circumstances in its enforcement.*

"A general practitioner" must see that the disease known, the medicinal substances named, the proportions relatively fixed, there can be no difficulty, save to the tyro; for the precise dose must be governed first by the general law, which every body knows, and secondly, by the peculiar circumstance of the case before him. We cannot comprehend our correspondent's difficulty, and should advise him to seek viva voce *information.*

Our friend in statu pupillari *is requested to call at our office. Phrenology may be studied far too much.*

We have received the paper from Yarmouth with the inquest. We may yet make use of it.

P. T. W.—D. M.—A Leveller—Medical Reformer—A. B.—A Looker-on, *and several other Correspondents, declined for want of space.*

Our drug price list next week, containing the price of drugs in the market on Tuesday next.

Quæsitor.—*We have already said enough of Westminster Hospital. If its authorities will not profit by what we have already submitted to them, neither would they though a hundred more correspondents were invoked to address them.*

Inquirer.—*American degrees are procured from so many sources that it is quite impossible for us to announce in these notices what are the regular preliminaries to their grant.*

A City General Practitioner *should take his question to head quarters. We know no more of the matter than he, and our enquiries for his benefit would not cost us less trouble than they would himself; time being at least as valuable to us as to him.*

A *in his answer to Mr. Williamson is too personal; the subject besides is exhausted for the present.*

H. I. B.—*The Tabulæ Anatomicæ of Arnold: Fasciculus II. They may be had of Baillie*rc.

M. D.—*Extra licentiates cannot legally practice within seven miles of London without the consent of the censors and president. No attempt, however, is likely to be made to levy the penalties, which are indeed not heavy.*

THE MEDICAL TIMES.

Saturday, May 27, 1843.

——— Hi mores, hæc duri immota Catonis
Secta fuit; servare modum, finemque tenere,
Naturamque sequi, patriæque impendere vitam;
Nec sibi, sed toti genitum se credere mundo.
Huic epulæ, vicisse famem: magnique Penates,
Submovisse hyemem tecto.———

Lucan.

We are perturbed to no ordinary extent. A sense of condescending honour, from a celebrity of the age, expands our frame to its peril, and makes us feel something more than mortal. A letter, a real letter, has come directly to us from a *personage*, from Mr. Samuel Cartwright, *(ille ipse)* the dentist of Old Burlington Street! It is not the most courteous of notes, but what of that? Is it not Mr. Cartwright's? The illustrious dentist well understood us. Were we not as little in his eyes,as he in the eyes of the aristocracy? If he by a necessity of his nature must exhibit ducal or lordling autographs in which he is addressed as lacquey, or set down jocularly as "ass," could we be the object of the great dentist's correspondence—a gentleman so truly respectable and polished, a *savant* of such pure science, in all spheres so elevated above our humbleness—and not publish the flattering proof? Were each word of his letter a phillippic in quintessence—we could not. We have no such stoic philosophy — no such Christian modesty; and, therefore, anxiously impressing on our readers' memories that Mr. Cartwright is verily and indeed our correspondent—that one of his friends is verily and indeed one of our readers—we do our impatient pride and self-esteem the pleasure of at once giving a transcript of the distinguished autograph. He who would appreciate the full honour of the great Burlington *savant's* correspondence will do well to remark in the note we give, the immeasurable distance Mr. Cartwright, by an easy, natural, hereditary *hauteur*, place between himself and us. We are the Lazarus of this dental Dives, and may well boast if we get the crumbs of contumely falling from his overstocked table.

Sir,—My attention has been directed (by a friend) *in* your last publication, *otherwise* I should not have seen *it*, *as* I make it a rule never to read such low and *scurilous* publications, teeming with abuse of the lowest possible trash, *and compiled* by cunning and designing knaves, whose disappointment in their various callings, has made them furious against their more fortunate brethren. I am well aware *who* is the author of *these* disreputable papers, signed Philo-Probe, *otherwise* his trash would not have met with such favour and puffing in your columns, *as* rogues of a feather, &c. &c.

If you, or your correspondent, imagine any sum, from me, to be *extracted*, to stop these vile and abusive attacks, you are egregiously mistaken. I shall, *however*, direct my solicitor to examine your paper, and if his opinion *directs*, I shall compel you to prove your statements.

I am, Yours, &c.

Saml Cartwright.

Old Burlington Street.

It has been asserted, we know not how truly, that a very eminent lawyer, who now honours the bench by taking a daily seat on it, and who as a condescension to his father, submitted to bear for many years the auspicious name of Cresswell, once came gracefully forward and bade an uproarious pit and gallery at Drury Lane be quiet, under pain of his immediately quitting the theatre. The appeal was of course successful; the amazed rioters felt the whole force of the alternative, and saved themselves the threatened penalty. Mr. Cartwright, judging by his letter, belongs to a similar order of great minds; and that we may acquire the distinction of exhibiting as much appreciating justice to his pretensions, as the theatrical mob are reported to have shewn to Mr. Cresswell's, we will shortly direct our readers attention to some of the more striking beauties developed in the immortal dentist's epistolary production.

Mr. Cartwright first tells us that his attention (distinguishing honour for the *Medical Times!*) has been "directed *in* our last publication." There is a vagueness in this phrase which, natural enough in a work-house or blue-school boy, is very significant, coming from the profound understanding of so learned a *savant*, and the polished pen of so accomplished a gentleman. Clearly he does not mean "*to*" our Journal, for he uses the very word that expresses no such thing. He does not mean "*into*," for his friend would in that case have directed his attention *into* anything—considering Mr. C.'s high standing in society—but very comfortable or befitting quarters. We presume, then, that our polished correspondent means, that *in* our Journal his attention has been directed —in which case, we have only to express our hope that he has been bettered by the trouble we have taken about it.

Wishing Mr. C. had more lucidly expressed his obligations for our kind direction, we pass over the words, "last publication," by which he doubtless means the last *Number* of our publication, and call notice to the "rule" the worthy dentist has laid down for himself. Where there is great temptation there is nothing like a "*rule*;" and with all the free tendencies the necessity of such a rule pre-supposes, what a power of self-restraint must be implied in this non-perusal, so obstinately enforced, not only of so many other journals, but even of the *Medical Times!* Glorious Cartwright! Self-denial, the true test of true genius, how in plenitude must it be thine! Thou art clearly not of the self-educated: *their* self-imposed rules (vulgar men!) are to *read*. Thy self-reliance great as its causelessness, thy highest want literature, thy least inclination study—in a noble phrenzy of self-sacrifice, thou, nevertheless, imposeth on thyself the rule —"thou wilt not read!" Ah! how must thy friends wish that thou wouldst not write either.

"Our *publication*" (Mr. C. is fond of this word) "teems with abuse of the lowest possible trash," i.e., it gave one column of

very modified abuse of Mr. Cartwright. "The lowest possible trash," is Mr. Cartwright's compendious definition of himself. What humility in greatness! What frankness in genius! Without telling us with what effect his attention has been directed in "our last publication," Mr. C. tells us he knows, or rather he is "*aware*," who is the author of "*these* papers, signed Philo-Probe, *otherwise* they would not have met with such favour and puffing:"—a very capital *sequitur*. What an important ingredient in the management of a London journal, is Mr. Cartwright's knowledge. His acquaintance is a sure means of securing its object, our panegyrics; and this, on the principle that rogues (not birds) of a feather flock together, for this is the meaning, we presume, of Mr. Cartwright's half dozen et cetera. Taking Mr. C.'s description of his "well aware" acquaintance to be correct, and connecting with it his self-definition, who will deny the aptness of his ornithological simile? But have not the perusals of our Journal, by Mr. C., been rather hasty? We have no more lavished praises on Philo-Probe, than on Philo-Probe's *soi-disant* acquaintance and "rogue of a feather," the dentist!

The recurrence here of the *otherwise* followed by the customary *as*, points attention to the peculiar beauties which have made this construction of sentence so much a favourite of Mr. Cartwright. We notice it solely in the way of suggestion.

We are told that we can "extract" no sums from Mr. Cartwright; the hint is of great importance, and is expressed in very professional language. We should as soon have expected to *extract* gentlemanly feeling from a man who cannot string together three words of his native language without an error of grammar, or scientific research from one who cannot comprehend an idea above the level of a dustman's conception. Extract sums from him! We are compelled to be serious. The miserable creature who can fancy that the writer of this article, or that the conductors of a journal, managed as this has been for now nearly two years, give out their opinions of persons or things as their hands are feed by this man's filthy bribes, or that, is one—the narrow cell of whose soul never witnessed the bloom of a generous thought, and who exists but as a loathsome charnel house whose portals never open but to pour out on mankind the baleful breath of mental rottenness. There is an ale-house atmosphere of vulgarity and infamy in the very suspicion, and the dolt, who, out of the depths of his unprincipled sordidness, makes such charges, proves but his own competency for the low vices he thinks so possible. The notion of such venality, like the assumptions of consequence by this petty plaything of circumstances, meets with our most thorough contempt. The conductors of this journal are far removed beyond suspicion: they defy scandal to point even vaguely to one action interfering with the most rigid independence. The gentlemen working with them are equally exceptionless; and were one slight instance shewn, by any one in our employment, of a malpractice so injurious to our interests, and so offensive to our principles—dismissal, not unattended with public shame, would be the inevitable consequence. Our worth is our character; and the mean, unsustained, and false insinuations of Mr. Cartwright will pass with those who know us, *or him*, to speak no more for the morality, than the other portions of his letter, for the elevation of his character.

The threat of Mr. Cartwright, couched in language so elegant and grammatical, is not very formidable. The sketch of our correspondent, which was certainly more playful than ill-natured, was more merciful than just, and can be easily verified. Its faults were those of omission, charitable faults, of which Mr. Cartwright should be the last to make matter of complaint. Our main reason for publishing it, and dwelling now on the remarkable letter which it has educed, was to direct attention to the miserable state of British Dental Surgery. Could any more telling illustration have been evoked, than the career of this low-minded bone-cutter, transmigrated, without education, into the scientific and responsible office of Dentist by his own single volition; and securing for himself, by his business craft and speculating ingenuity, a large practice, and high scientific eminence? If any one doubted our statements as to the character of his attainments, how completely has Mr. Cartwright, in his letter, removed all incertitude. It is a letter unique in the annals of science. No footman, with the benefits of a fair parochial education, ever wrote so illiterate a document: yet it comes from (in rank) the first dentist of the day, a well-dressed and well-housed person, in the receipt of five or six thousand scientific pounds annually; who looks down upon a London physician, and the other conductors of this Journal, with the most perfect superciliousness and disdain! We repeat it,—the letter is a perfect curiosity, and as we have no doubt that there are many of our readers collecting the personal *memorabilia* of science, who would think so singularly valuable an autograph, well worthy of preservation, we hereby offer it for sale to the curious at the low price of ten guineas, a sum which, when received, we shall offer as the reward of the best prize essay "on the causes and best remedy of the present degraded state of dental surgery." We now take our leave of Mr. Cartwright, thanking him for his courteous and gentlemanly letter. It is at once a pride, a pleasure, and a utility to us to be honoured with his communications, and on the principle of well-deserved gratitude, we trust to make him more serviceable to dental science than he ever dreamed of in his least interested hours.

PENCILLINGS OF MEDICAL MEN.

Guy's Hospital—Aston Key, Esq. F.R.S.

As a natural transition, we cross over the way from St. Thomas's to Guy's Hospital. This magnificent monument of individual munificence was founded, endowed, and maintained by Thomas Guy, the son of a lighterman, and coal-dealer, in Horseleydown. He lost his father at the early age of 8 years. In the year 1660 he was apprenticed to a bookseller in Cheapside. In 1673, he was admitted to the Livery of the Stationers' Company. He began business with a stock of about 200*l*. He entered into a contract with a Dutch printer for English bibles to be imported here; but as it interfered with the privilege of the University, they were seized when they arrived. He afterwards made terms with the University, and carried on a lucrative trade with it for many years. He made also a great deal of money by the purchase of seamen's and soldier's tickets, during the continental wars of Queen Anne. It has been ill-naturedly stated, that his taking offence at a slight indiscretion and interference with his will, on the part of a servant-maid to whom he had promised marriage, was the cause of his devoting his fortune to charitable purposes. In 1707, he built and furnished three wards in St. Thomas's Hospital, and gave 100*l*. annually for eleven years, previous to the erection of his own. He fortunately, for the interests of humanity, took his property out of the South Sea Stock. He served in Parliament for Tamworth, in Staffordshire. He took a lease of the present ground of the hospital from the trustees, at a lease of 30*l*. per annum. The sum left to endow it was 219,499*l*. and 19,000*l*. to erect and furnish it; the property to be managed by 52 gentlemen, royally incorporated for the reception and relief of 400 sick diseased poor objects, besides 20 lunatics maintained in a separate hospital. It is exempt from taxes on servants.

To Christ's Hospital he bequeathed an annuity of 400*l*. at the nomination of the governors of his own hospital, preference being given to his own relations; also annuities for life of 870*l*. and 25*l*. among his younger relations and executors; 1000*l*. for discharging poor prisoners within the City and Counties of Middlesex and Surrey, and founded an alms-house in Tamworth and London. In the centre of the square is a brass statue of him, by Scheemakers. The buildings consists of a centre and two wings, behind the former is a separate edifice for the reception of lunatics. One of the wings contains a hall and rooms for public business, and the other a chapel, which contains a beautiful monument to Mr. Guy, who is interred in the vault beneath. He is represented raising a half-naked emaciated figure from the ground, and pointing to the hospital in the distance, in which another sufferer is just being carried. The wretchedness of one contrasts with the humanity and benevolent expression of the founder. It is the production of T. Baker, Esq. In 1829, a splendid bequest of two hundred thousand pounds was made to the governors by the will of Thomas Huntley, on condition that they made accommodation for 100 additional patients.

Aston Key is, we think, without dispute, the principal surgeon of this institution. The demise of Sir Astley Cooper left the territory entirely his own. There is no approach to even distant competition, much less rivalry. Without having the slightest pretension to genius, or pre-eminent ability, he is, to use an expression of the celebrated Whitbread, "very near being a very clever fellow." Here, however, he reigns supreme on the principle of

the old aphorism—"Un borgne est un roi entre les aveugles." Where so much nepotism has for generations prevailed—where interest and the ties of affinity and consanguinity, have always exeluded every other claim, it could not be otherwise. The nephews, the nieces' husbands, the apprentices, the thirty-first cousins—every branch of the genealogical tree, however remote, have been pensioned upon the coffers of either of the two hospitals, as their names have been found (to the eye of veritable faith), inscribed on the coffins of so many of the hospital inmates. Key is by far the best of the alumni; he has the most chirurgical dexterity in the literal acceptation of the term, and although mere mechanical surgery is looked upon as the lowest part of the accomplishment of the surgeon, it is always in demand in a great city like London, where the accidents to life and limb are 30,000 annually; and when we are obliged to have recourse to it, we like to see in the operator all the necessary qualifications to undertake the task. Key is a neat, elegant, finished operator; he was never known to bungle from any ignorance of details. He handles his scalpel with singular ease and grace, and waves it in semicircles as the painter his pencil, and has the art to invest with interest by his exquisite execution, an operation that in other hands would appear hideous and revolting; every movement proclaiming the peerless proficient, the perfect artist. As a lecturer he entirely fails. He can, indeed, as Shakespear says, "make periods in the midst of sentences." His lectures abound with colloquial barbarisms and cockney phraseology. He has never read Crabb's Dictionary of synonymes. His instructions are plain and simple—there is no attempt at secondary ornament. He enters hurriedly into the theatre to impart a proper notion of the value of his time, and after a few deep inspirations, to bring the vocal organs into play, into what he no doubt considers a perfect state of modulation, a shrill, acute, disagreeable sound, with a peculiar lisping and nasal twang, strikes upon the ear with about as much melody as the grating of a hand-saw. He seems to have a great antipathy to the liquids of our language. He, for instance, pronounces *perhaps* as if it were spelled *pwaps*, *wight* for *right*, in such a manner as to satisfy the sceptic that he was born in the Borough.

He is a thin spare man, with a long visage, and narrow forehead, the range of the organs over the eye prominent, which is small and sunken, denoting truly the absence of any great commanding language—nose high, large, prominent, and deflected forwards from the natural perpendicular. The perceptive are much more comparatively large than the reflective faculties—forehead high, but declining backwards—lateral side of the head not well developed, the face narrow and sharp, with a general expression of quickness and sagacity. Key has a habit of shutting his eyes during the accouchement of some refractory word that is difficult of delivery, accompanying it, with certain spasmodic twitches of the levator anguli oris muscle that now and then gives a very grotesque appearance to his profile.

"Although his speech is like a tangled chain,
Nothing impaired, but all disordered."

Although the substance of his discourse is in general very irregular and disconnected; it is very valuable as the result of actual observation, and the deduction of very great opportunity and experience. Whatever he does touch upon is marked by a line of light thrown upon it by the illustrations of the numerous cases that he advances to establish and enforce it.

In his eagerness to impart what he knows, he often omits some of the most important divisions of his subject. The great discriminating shades of difference may not be eloquently delineated, the minuter features even of distinction may not be masterly traced—but the broad, bony outlines, the points of good practice, are, however, emphatically and strongly impressed upon the mind of the diligent pupil. The minute criticisms of some refined and super-sublimated surgeons are so easily effaced, and so seldom retained, that perhaps he is right in the course he pursues. One hour's self-communion on delicate and debateable points, where all are impartially urged in a well-written work, is more profitable to the pupil than one hundred lectures. He does not attempt to mesmerize or amuse the pupils in the theatre: his performance is reserved for the wards. There is none of the quaint, dry humour, the Atticism of Abernethy, the agreeable anecdotes and facetiousness of Sir Astley Cooper. To be seen to perfection you must follow him to the hospital—Napoleon's eye was never lighted with purer ambitious pleasure, when, at the head of a brilliant cortege, he dashed on his gallant charger into the centre of the square of the Thuilleries to review his devoted veterans after some glorious campaign, than Key when he steps along the wards, with his head erect, with his numerous suite or staff of admiring pupils. He marches along with "gay, theatric pride, as if he felt himself every inch a king." There is an air of conceit—a conviction of self-importance—an arrogant pretension to optimism, which would be regarded by his equals as an assumption, we will call it usurpation, but is regarded and recognized as his right by his subjects. It has been said of Euripides that every verse was a precept. Every look is here a law—every diagnosis infallibility—every prognosis, life or death. Doubt is treason—scepticism, infidelity. If an error now and then occurs, it is one of Nature's freaks. She departed from one of her fixed laws,—she may be wrong, but her interpreter, her prophet, Key, never! Every word he utters—manna, molten gold. Homage and obedience greet him on every side. Observations the most trivial become aphorisms, apopthegms to be "engraven on the tablet and volume of their brains," as a source of wealth and future distinction. Incense such as this has turned stronger heads. Cicero acknowledges the soft impeachment, when he dwells in his letters with such complacency upon the days when he was followed from the forum by troops of clients, intoxicated with the charms of his fascinating and diffusive eloquence. Key, now and then, bends from the stiff dignity of professorial parade, and cracks a joke, which, in general, has no affinity to the true alchymy of wit that turns every thing it touches to gold: it is caught up with rapture, and rewarded with the loud and willing laugh. He is, indeed, the Epicycle of his own circle, they revolve around like satellites around the sun. He is spoiled by his flatterers, but their fanaticism is sincere. They are the young, raw recruits of surgery; they have just arrived in town. They have been recently emancipated from the fetters of provincial apprenticeship. Their imaginations are stronger than their judgments; every thing is bright with the sunshine of their young hopes, that now first begin to bud and blossom. They measure the profession by the standard of their late master. The professor only seen for the hour, in which he plays off the best of his parts, having the prestige of a metropolitan name, is looked upon as a superior being, is invested with attributes almost superhuman, and which he never possessed—is looked upon as an intellectual giant in their eye. Everything is prepared to produce this effect. The celebrated Cormenin, in his "Livre des Orateurs," when writing under the signature of "Timon," happily expresses himself as to the Chamber of Deputies, "Nos Chambres sont de petites eglises ou chacun place son image sur l'autel, se chante des magnificats et s'adore soimeme." The same thing occurs in every hospital. If we were to believe Key, he is the light of the age, the fountain of authority. He prescribes this—he recommends that—whatever he orders is attended with certain success. He puts the trumpet which he has just done blowing, into the pupils' hands, and they blow it with all their might, with all the force of their lungs. They sound his fame upon the highways—he is lionized to the top of his bent. They do not stop to enquire what are his real pretensions—they do not stop to ask what profound deductions, from the vast storehouse of facts, he has made—what new and splendid triumphs in surgery—what inventive powers in critical cases he has displayed. Those swarms of anatomical aggregates that buzz about the porticoes of the wards, upon whose brows, "warehouses to let" might be well written—these stupid starers never ask if the ambition of the man be mercenary, be base, be barren, be illegitimate—whether it aspires to the accumulation of principles scientific, or to pounds sterling, or if his works or his writings bear testimony to the profundity of the knowledge and depth of his conception—what unrivalled excellence, what unequalled acquisition, he had displayed, to place him in such a post. The question that Fox relates he had heard Napoleon ask, they never put to themselves. When a young English officer, handsomely dressed, belonging to some militia regiment, was presented to him without an announcement or key to his rank or quality his question was—"Qu'a-t'il fait?" a test and criterion of merit which they would do well to adopt. These observations are general; they apply not to the individual but to the species. One year over, the illusion ends, and they begin to see things in a right light. The giant decreases until he dwindles into a dwarf,—the golden idol, on closer inspection, is brass, and has feet of clay. The same ingenious artifices, the rhetorical devices, that captured them, are played off on the dupes of the succeeding session,—the advantages exaggerated, the promises unredeemed, the pledges broken,—courtesy and attention turned into neglect and superciliousness. They find, as they proceed in their studies, that the plumage in which the professor strutted, is appropriated; that little is to be learned from the hurried attendance of cases in hospitals. They submit to the imposition, to the extortion, in silence; the College, as base monopolists, and interested, awards it, and the law allows it. Their money must go to swell the coffers of men who give nothing in return for it. They must not remonstrate; they want their certificates, they have no other alternative—to be silent, or to be ruined.

There is something of the character of Sir Topling Flutter about Aston Key. His dress speaks the studied toilet: if he wears a peculiar coloured waistcoat, the tailors in the neighbourhood have orders for a similar pattern. The GUYS pride themselves on their style and their *bon ton*: it is a mixture of Bond-street and the Borough. The high priest of fashion, here, is a son of Sir Moses Montefiore: Aston Key had an enormous premium with him: perhaps this is the reason he is always quoting and referring to him in his lectures. He is the Count D'Orsay;—the well-trimmed tiger, the gaudily caparisoned horse, the emblazoned panels of the cab, proclaim the dandy. This adulterous amalgama

tion of Houndsditch, or East-end, with West-end gentility, serves them for a copy, but it bears in its ostentation the impress of its original vulgarity too strong, to have any resemblance to the accomplished Frenchman.

Mr. Aston Key is the son of a general practitioner, late in life dubbed as M.D., and who made a great deal of money as an obstetrician. He was wise in his generation, and speculated in laying out a round sum as an apprentice fee to Sir Astley Cooper. He succeeded in winning the good graces of one of that surgeon's nieces, knowing that her dowry was a certain introduction into the hospital. He has been most assiduous and unremitting in the cultivation of his profession. He is an excellent anatomist, and has been patient and industrious in the investigation of physiological subjects. His powers of discriminating are prompt and correct—his medical treatment judicious and scientific. Many charges have been brought against him for tyrannical treatment of pupils on one or two occasions, but we never saw anything in his conduct approaching to unkindness. Indeed, he would not be so popular among them if it were true.

In 1824, Key and Morgan were elected assistant surgeons. Key very soon proved that his opportunities had not been lost upon him. He operated on a case of carotid aneurism, in which he displayed great self-possession, and a most accurate knowledge of the parts. He also gained great credit for a very clever operation in a case of the division of the tibia for the cure of deformity occasioned by a gun-shot wound. We have read all his writings, and followed his practice, without discovering any striking peculiarities in his views. In inflammation of the synovial membrane, he draws a line of distinction between absorption of the cartilage, which is a healthy action, and ulceration of the cartilage, which is a destructive process. He affirms that the primary ulceration of the cartilage is a much less frequent disease than Sir Benjamin Brodie describes it. He considers the absorption of cartilage by means of a membrane, as a process set up by nature, to prevent ulceration. To this it is urged, we believe, by the Johnsons, who championed the baronet in their able review, that inflammation of the synovial membrane is not the most frequent cause of ulceration of the cartilage, and that the ordinary strumous affection is disease of the cancellous structure of the bones.

He wrote also a memoir on the advantages and practicability of dividing the structure in strangulated hernia on the outside of the sac. His views have been answered by Lawrence and Samuel Cooper.

In 1833, he was elected senior surgeon. He is formally known to the profession as the author of a work on lithotomy and as a patron of the straight staff; adhesion of the intestine he admits may constitute a case that will not admit of being returned without opening the sac,—he might have added many other exceptions. He objects to the old operation, that it is fraught with danger, and that this essentially depends on the division of the sac, and the exposure of its contents to the air and to the gross manipulation of the surgeon. On the contrary, the supporter of the ordinary operation, replies that the opening does not tend to increase or aggravate the risk, and is only an imaginary peril, while, on the contrary, we may return it in a state of gangrene. This is a well written work, but the views are not safe, nor sound, nor adopted.

In 1837, he published, in Guy's Hospital Reports, a practical view of lithotrity, with remarks on the lateral operation of lithotomy. He says that the new operation can on no account be regarded in the light of a substitute for the old, but it may be a valuable adjunct as furnishing the surgeon an additional means of relieving a most alarming and painful disease. As an exclusive operation for the removal of the stone, lithotrity cannot maintain that rank which it has been made to assume, and if indiscriminately adopted to the abandonment of lithotomy, it would be found inferior even to the latter operation both in safety and in success. It is useful in small stones. The large stones and the worst cases must be left to lithotomy; early application for medical aid will prevent the necessity of the latter.

The dangers of lithotomy are hæmorrhage, infiltration of urine, injury to neck of prostate gland, peritonitis, wound of rectum, fistula, impotence, incontinence of urine. In order to make the examination in lithotrity more satisfactory, the stone should be dislodged from behind the prostate, by suddenly inclining the patient backwards, and altering the axis of the bladder, which is effected on a couch or chair. He uses Baron Heurteloup's rectangular bed. The steel sound is best calculated to transmit sound. In his work, he claims to have invented a fishing-rod and net attached, to catch the fragments of the stone, and also a percussor, which are now never heard of or used. Mr. Costello, in whose hands the lithotrite seems instinct with sagacity and life, breaks up calculi of seven, eight, and nine ounces weight. What a shame that this erudite and gifted surgeon is not on the Council. Key's paper was full of practical information to young surgeons, but was nothing like a masterly comparison of the two operations. It has since been attempted by Dr. Willis, in a very good compilation in which the pros and cons are with industry arranged, but as it is known that he manufactures books according to orders on all subjects, and his literary bundles are known to all the conveyance offices from London to modern Athens; it is not attended to with the attention it really deserves. This is one of the results of fabricating works on diseases for which the author never had a single patient. There is not a work in the library that this Caledonian representative of the appropriation clause will not, by the alchymy of intellectual transmutation, sweat or convert into pounds, shillings, and pence—he delves away like a Cornish miner, with untiring industry, at the literary treasures that surround him, and so changes and disfigures the ore as he gets it, that the owners do not know it when they see it. We hope he puts his money in the new 3½ reduced. He will be soon able to retire, as he promised, when he can earn £300 a year.

We have to remark, in justice to Aston Key, that he is one not only of the most successful but decidedly, *longo intervallo*, if we except Sir Philip Crampton of Dublin, the most elegant operator in lithotomy we have ever seen.

We have, now, to speak of him as a controversialist, for he has stripped in the ring. Although not a very hard hitter he is able to take his own part. He is bold and active. In some of his sets-to he was successful. In one or two he got sorely pummelled, and he paid forfeit to Dr. Blicke, of Walthamstow, who gave it to him hip and thigh, right and left; the effect of which, in the minds of many, he has not got over yet. As a polemic he was more ingenious and agile than argumentative, more of the dialectician than the logician. He had more the art of drawing, apparently correct consequences from false data, than of deriving necessary consequences from true principles. In his pamphlet on medical reform, he tried like the man and the ass to please all parties. He was anxious to satisfy the profession and not to offend the council to which he expects to be elected after Mayo. He was overflowing with just indignation at their base conduct. He was willing to wound but yet afraid to strike. He hints a fault and hesitates dislike. He points out good and wholesome remedies, but slurs over as gently as he can their public profligacy. Its great merits, its liberal principles, made the book very well received. He contended earnestly for the right of representation. He is by interest a conservative, but like the honest and philosophical South he is a radical reformer in medical matters by conviction, by disposition, and an innate hatred of the injustice, spoliation, and usurpation of the Council of the Royal College of Surgeons. It is clear, however, that he loves authority for fear of anarchy, as some love liberty for fear of despotism. He wishes for a more elective Council, yet has a horror of a general suffrage and of an election itself. He oscillates like a pendulum between the two extremes. In his desire to mediate between the opposite parties, he floats like a ship that had lost its rudder, or an anchor between two coasts. He evidently thinks with Sir Robert Peel of the College, that their desire was not to provide well-educated surgeons but to put money in their own pockets. These demands were on that occasion scouted with disdain; they managed to obtain the same ends afterwards by manœuvre, and by base, and shameful, and mercenary bye-laws.

Aston Key is opposed to the abolition of the apprenticeship, and to the abridgment of the period of study, and to taking the education of the young wholly out of the hands of the general practitioner, and to the pronouncing them on the part of the council unfit to train the pupil in the initiatory part of the profession; he blames them for being bullied into this absurdity by the utopian schemes of that impracticable *reformer*, Thomas Wakley. He runs into the error of advocating different degrees of professional requirements, by practitioners and hospital surgeons. He was desirous of throwing open the council to the whole body of its members, the only means by which its strength can be permanently increased. There is a great deal of candour and honesty, with a considerable admixture of sense and nonsense in the pamphlet. Dr. Blicke charged him with giving evidence calculated to ruin him in a very flippant manner. He charged him "with advancing on his trial with Mr. Horswell, opinions on speculation and theory hastily, and unadvisedly;" that he stated on the examination of the leg on which the charge of mala praxis was founded, that he did not know whether the fracture was oblique or transverse; that he went into the witness box impressed with the idea that he had to prove a fact of which he confessedly knew nothing; that he was either malicious, or stupid, or bewildered, or worse. That on that occasion the two *brothers in law*, were *marvellously of accord*,—to all these charges there was no attempt at an answer. A verdict was given in favour of Dr. Blicke, and no imputable blame could be sustained.

We believe that the short staff and knife are his favourite instruments: he recommends the gorget as a safe instrument: he is not afraid to tear through the prostate. He has operated on a child as young as sixteen months. He praises Weiss's lithotrite: it may be used without hammer or screw. In 1838, he wrote on paraplegia depending on disease of the ligaments of the spine. The most diligent exami-

nation of the spine or nervous system fails to elucidate the cause. Rigid horizontal position should be enjoined.

In 1839, he gave a report of primary syphilitic cases admitted under his care since 1825. He thinks the lines attempted to be drawn between the different kinds of sores is too defined, inasmuch as nature points out no such lines of demarcation, and that the best way is to distinguish according to characters, as Carmichael, Bacon, and Wallace have done; that induration is not necessarily accompanied by chancre; that sores pass imperceptibly from one class to another; that secondary symptoms are the best test of the syphilitic nature of the sore. The more intense the poison, the more the secretion differs from ordinary pus. In a syphilitic sore, a distinct adhesive stage is seen before granulation takes place. He agrees with Dr. Wallace, we may add Ricord, that nitrate of silver is the best application: in primary sores he gives mercury; to irritable sores, Dover's powder, some water and opium, cold infusion of sarza and quinine; in mild forms of phagedæna and sores, of yellow slough, preparations of iodine; to the dark sloughing ulcer, nitric acid. This is the ordinary treatment.

Key's power of concentrating his attention to one study gives him an advantage over men to whom the title of originality belongs, and whose aggregate of faculties are greater than his. It is evidently the acuteness of the æsthetic power, which proceeds from the external senses, which gives him an ascendency over men of greater general ability.

Without wishing to reproach phrenology with the faults of its friends, with their mechanical errors, without attempting to measure man's genius, or its temple, by the plumb-line, the tape, or the rule, and holding the doctrine, that thought is the consequence of organization, that the exterior marks of superiority on the human face divine, are often the similitude of the outer and inner man; we should like, when seeking Key's judgment, to have found expanse rather than elevation of forehead, as we feel disappointed in the poet of rich imagination not to perceive a noble and lofty arch spanning the frontal region—the seat of the palace of the soul. We know many cases of simulated disease where they succeeded in deceiving him, and some whom he doomed to die years ago, who are alive and hearty. His great forte is the use of the knife and his diagnosis, where he may have equals, but no superiors: as a consulting surgeon, we predicate great success—he will be first: he has lately become one of the thousand and one extraordinary surgeons of Prince Albert.

With a general practitioner of experience, and who had the reflective faculty strong, in Key with his powers of observation, in a medical or surgical case, we would place our lives with more confidence than in the whole of the College of Physicians.

PROBE.

REVIEWS.

On the Anatomy and Diseases of the Urinary and Sexual Organs. 3d Edition. By G. J. Guthrie, F.R.S., Surgeon to the Westmister Hospital, &c. &c. &c. London, John Churchill, Princes-street, Soho. 1843.

IF this is not the most characteristic or most original of Mr. Guthrie's works, it is one which will not detract from his well-earned reputation. The book is replete with solid, practical instruction on a very important branch of surgery, and the subject is treated throughout in a calm, dispassionate, and judicious manner. The work consists of seven chapters, in which every point of practical importance relating to urinary obstructions, is referred to in a succinct and business-like way—and the treatment of stricture of the urethra, in particular, discussed so as to leave little to be desired. The most important part of the work is that which refers to *stricture* of the urethra. Indeed, though all the other parts of the book had been omitted, leaving this, the loss wou'd not have lessened the practical value of the work. The anatomical part of the book is by no means the best; Descriptive Anatomy is obviously not Mr. Guthrie's forte. His descriptions are always too general, and consequently more or less vague and imperfect. Mr. Guthrie describes as a surgeon, not as an anatomist. His anatomical descriptions delequesce into "surgical observations" The scientific anatomist, on the other hand, describes nature as she is, uninfluenced by extraneous considerations, and thus, like the moralist, follows virtue even for virtue's sake.

We have a sketchy description of the different sub-divisions of the urethra,—the prostatic—the membranous, with the muscle with which Mr. Guthrie's name is now, in connection with that of Wilson, usually associated—and the spongy portion from the *bulb* to the orifice of the *glans:* which description, though not full or complete, is correct so far as it goes, and blended with pathological remarks, which in themselves are of much practical value. To the surgeon, a knowledge of the structure and relations of every part of the urethra is indispensable: and in investigating the pathology and surgery of stricture, he must be thoroughly acquainted with all the textures that enter into the structure more particularly of the spongy portion where the stricture usually is found.

Mr. Guthrie has no doubt referred, and in a general way, to all these strictures, viz.,—1st. The epithelium lining the urethra.—2nd. The mucous membrane.—3rd. The elastic tissue lying exterior to the mucous.—4. The erectile tissue forming the proper spongy structure, covered externally by an external fibrous lamina, and connected still further to the skin by a layer of loose cellular texture, in which adipose matter never accumulates,—these structures are referred to, but not sufficiently described. This is to be regretted, as both anatomy and surgery would no doubt have been benefitted had Mr. Guthrie directed the energies of his acute mind to the structure of that elastic layer which lies between the mucous and the erectile tissue, and to the changes it undergoes during both the formation and resolution of a stricture. The practical part of the work commences with the third chapter, entitled, "On the Formation of *Spasmodic* and *Permanent* Stricture." Although frequently spoken of, spasmodic stricture is of rare occurrence. Mr. Guthrie has seen only one well-marked instance of it; and those cases usually mistaken for this affection are, in reality, incipient permanent stricture, in which there is a decided narrowing of the part, from a morbid condition of some of the textures involved, inducing, for the time, an irregular action of the muscles that surround the tube. The practice recommended, is to pass a small gum elastic catheter.

If it passes, so much the better; if it does not, the patient submits more cheerfully to the injection of a large quantity or repeated quantities of hot water into the rectum, and when the bowel is clear, and the hot water has acted as a bath to the neck of the bladder, to an enema composed of two grains of opium dissolved in two ounces of warm water. This will easily remain, and by its sedative qualities give effectual relief. If it should not, the same kind and quality of injection should be repeated every two or three hours, if the patient should not sleep, until the urine begins to flow, with half a grain of the muriate, or acetate, or bi-meconate of morphia, in a pill or draught.

Permanent Stricture is the one with which the surgeon has most frequently to do. It is the most difficult, in all its complications, to treat, and regarding the pathology of which, the greatest obscurity reigns. Membranous valvular foldings of the mucous membrane, or caruncular excrescences from that membrane, do not constitute, even when existing, true stricture. The disease so denominated commences with an inflammatory state of the mucous membrane of the part, passes by an easy gradation from the mucous to the elastic tissue, and thence to the spongy, which drawn also into the vortex of the disease, all lose their natural structure and functions, become matted together, and from the subduction of the elastic property, which maintains the potency of the tube, the canal becomes gradually narrower, till the urine can no longer flow. The *symptoms* of stricture are vividly and accurately described, and cannot fail to make a deep impression on every one who reads them. Slow and insidious in its progress, the disease, if not counteracted, marches on to a serious, if not fatal, termination, but not before it has induced, by the constant straining of the abdominal muscles, many secondary, but aggravating evils, such as piles, prolapsus ani, hernia, swelled testicles, &c., &c., till, in the forcible language of Mr. Guthrie—

Worn down by his sufferings, in the agony of despair, he prays to God for his dissolution; and if it has pleased the Almighty to weaken his intellectual faculties, as it has been his will to afflict his bodily powers, he sometimes becomes forgetful of his duties, and seeks for a temporary solace in laudanum or other narcotics, the augmenting doses of which he hopes and expects may put an end to his sufferings.

The *cure* of stricture, according to Mr. Guthrie, may be effected in four different ways—1st, by dilatation—2d, by caustics—3d, by cutting instruments, and 4th, by a combination of dilatation, burning, and cutting. Nothing new is proposed with respect to the first of these methods. Bougies of various sizes are to be used in succession, care being taken not to form false passages, or to proceed too rapidly with the dilatation, as this last is liable to produce annoying irritation of the urethra, and bladder itself.

The only caustics used for the cure of strictures, are the argentum nitratum and potassa fusa, both of which should be used rather for the purpose of allaying irritation, than for directly removing the stricture, by destroying the textures involved. Caustics may sometimes act indeed by promoting absorption of the morbid structure, but they never can act beneficially by removing a part of the natural textures, for how are these textures to be regenerated, or how is the deficiency thus superinduced to be afterwards supplied? Any structure acted upon by cautery, whether actual or potential, must afterwards cicatrize, and every cicatrix has an inherent tendency to contract, and could thus never preserve the tube in its pristine potency. Dilatation is, therefore, preferable to burning, and indeed were the stricture removed, in the first instance, by the caustic, the cure could not be completed without the aid of the bougie. In the case of *impassable* stricture, other means than those adverted may be required, and regarding these the work of Mr. Guthrie is copious and satisfactory. The chapter on the treatment of impassable stricture is highly interesting and valuable, and lucidly demonstrates the resources of art in this very nice and difficult part

of surgery. Impassable stricture is viewed by Mr. Guthrie under a two-fold point of view—1st. When the stricture is still permeable to the urine, although impassable to the bougie,—and, 2dly, when the obstruction is so great the urine itself cannot pass. In the first instance, the obstruction may be removed by the proper use of the bougie alone, and, in the second instance, when the symptoms are urgent, or the bougie has failed, the urgency may be relieved by cutting down to the membranous part of the urethra and evacuating the bladder, then incising the stricture, and effecting afterwards the cure by the proper use of the bougie; or when the case is not so urgent as when a fistula exists, which is a safety-valve for the patient, by transfixing the stricture with a lanced-shaped stiletto, as with Stafford's instrument, a bougie may then be introduced into the bladder, and the process of dilatation proceeded with in the usual way: various cases are given illustrative of this mode of treatment, and the subject summed by the author himself in the following words.

1. That the membranous part of the urethra is rarely the seat of obstruction, which is always situated, on the contrary, immediately before it, at the termination of the bulbous portion. 2. That false passages usually begin a little anterior to this part, and pass between the superficial sphincter ani and compressor urethra muscles, to the deeper seated sphincter near the termination of the rectum, and backwards towards the bladder. 3. That the surgeon may divide, if he should think fit, an obstruction in any part of the urethra with little danger, as long as he can feel the point of his instrument in the perineum; but that it is dangerous to do so without great caution, and great knowledge of the parts, for the next inch beyond that point, and for this operation the instrument should have a proper curvature. 4. That he can always tell when any instrument enters the false passage, the fore-finger being in the rectum, from the comparative thinness of the parts, when the point of it is proceeding in the wrong direction externally to the membranous part of the urethra and its compressor muscle. 5. When he has ascertained by these investigations that the catheter or other instrument is in the false passage, it must be withdrawn, just as far as will remove it to the situation of the passage in the stricture, when the point must be directed into it, the fore-finger guiding it inside the compressor muscle, until the point is felt beyond it in the membranous part of the urethra, when the handle of the instrument being depressed, the point will pass on into the bladder. The urine will not, however, always flow through it until the patient rises, and much anxiety may be unnecessarily suffered if this fact should be unknown or neglected.

The chapter on retention of the urine is full of excellent practical suggestions. When either from causes existing in the bladder or urethra the urine cannot be evacuated by the efforts of the patient, the surgical operations devised for relieving the patient, are of five kinds, 1st. Puncturing the bladder above the pubes —2. Puncturing the bladder through the rectum—3. Opening the urethra from without—4. Dividing the stricture by an instrument passed along the urethra, and—5. By a combination of the third and fourth plan. Mr. Guthrie prefers relieving the bladder from the perinæum, and adduces arguments in favor of the different plans, and the objections also to which they are open, but these are points on which the reader would do well to consult the book itself.

In the last chapter which treats of irritation of the membranous and prostatic parts of the urethra, the warm bath, opium, and the judicious use of the bougie, are the means chiefly recommended. The following case may be given as illustrative, not only of the more remarkable points of treatment usually followed in such cases, but also as showing the propriety of pushing the soothing system sometimes to the fullest extent.

A gentleman who had had a No. 10 solid bougie passed, without difficulty, on account of an irritation, and discharge from the urethra, got wet, and caught cold, which brought on a greater desire to make water, with difficulty and pain in the region of the bladder: leeches were applied above and below the pubes in the morning, and were repeated in the course of the day. An enema of two grains and a half of opium was administered, and a grain of calomel and one grain of opium were given every twenty-four hours, with another pill composed of two grains and a half of extract of henbane and of hemlock; four injections were required in the first twenty-four hours, and six pills. On the second day, the 5th, the bowels were freely open; but the irritation and desire to make water, which was then accompanied by straining and pain, had not diminished; three opiate injections were administered, and one of warm water; he took six pills of each kind, and had a hip-bath whenever he pleased; a very small elastic catheter was introduced in the evening, and met with slight obstruction at the prostratic part of the urethra, but no swelling could be felt per rectum. 6th. The pills and enemata repeated; the opium being increased to three grains in each injection. The bowels were opened by castor oil, the catheter passed night and morning: slept towards morning, and was easier. 7th. Continued the enemata of three grains of opium three times in twenty-four hours. Had a draught, of one drachm of tincture of hyoscyamus and an ounce of camphor mixture, every four hours, which quieted a slight degree of nervous excitement. The bowels were opened by four grains of calomel, and four grains of extract of coloc. comp. By these means he was kept tolerably free from pain; but the desire to make water, and the inability to discharge it remained, and sometimes required the catheter to be passed a third time in the twenty-four hours: he ate an egg, some pudding, and took some beef-tea daily. On the 10th, a purulent discharge took place from the urethra, which gave relief; and on the 12th, he passed his water freely, and slept well: the opium being omitted, with the exception of one injection at night, and the infus. rosæ with the sulphate of quinine were substituted for the henbane draughts. This gentleman was restored to perfect health in a fortnight afterwards, and has since remained free from complaint. He had during eight days three injections into the rectum of three grains of opium each, and took six grains of opium, besides five or six draughts of one drachm of tincture of henbane every twenty-four hours. The quantities merely kept him tolerably quiet, and never caused more than a very moderate degree of sleep for two or three hours at a time, and to them he perhaps owes his life or his senses.

A few remarks are made by the author on the changes the urine undergoes in affections of the bladder and urethra, but they are not sufficiently important, except to the tyro, to claim any lengthened notice.

We cannot close this review without reverting to the practical value of the work, and exposing a hope that the author at no distant period may be able to finish what he has so auspiciously commenced, and thus add to the laurels he has already so nobly won.

MEDICAL NEWS.

Ethnological Society.—Dr. Holt Yates in the chair. The attention of the meeting which met at Dr. Hodgkin's, 9, Lower Brook-street, on the evening of the 19th, was engaged in hearing a paper from the pen of Edwin C. Suttor, Esq., on the Bathurst tribe of the Australian variety of mankind. The author corrected the opinion pretty generally prevalent of the inferiority of the Australian race, both physically and intellectually over the other divisions of the great human family. In stature the Bathurst natives range from five feet ten inches, six feet not being uncommon; and in intelligence they hold a fair average rank in the scale of uncivilized man. They calculate time by the changes of the moon, and distances by their night sleeps. In speaking of a very distant event, they reckon by the changes of seasons. They have a considerable knowledge of astronomy, assigning names to particular stars by which they guide their wanderings. They indulge in an idea, which is purely Australian, that after they die they become white men—"tumble down black-fellow jump up white man," being a common expression with them; and thus they are better reconciled to the white intruder upon their hunting grounds than aboriginal men in general. Their dances, both of war and of the chace, were described as particularly manly, and the author did not doubt, had Dr. Prichard been an eye witness to them, that he would have hesitated before he called the Australians, in his Researches into the Physical History of Mankind, "the squalid companions of kangaroos crawling in procession in imitation of quadrupeds." The paper was full of facts, for such they must be called, since Mr. Suttor from his earliest infancy has been associated with the people of whom he writes. The conversation which followed the reading of the paper was animated and varied in its character. Dr. Anthony Todd Thomson drew attention to the author's statement, that the Australian native had an aversion to salt; the Baron de Bode to the fact that "gin," the name for woman in the Australian language, is the same among several divisions of mankind. Dr. Hodgkin pointed as existing in this race a remarkable breadth of the outer part of the os frontis, as well as a flatness. Messrs. George Ramsay and J. A. St. John, and Dr. Richard King also addressed the meeting, which separated at a late hour

Sudden Death of Frederick Tyrrell Esq., of New Bridge-street.—We regret to announce the demise of this eminent surgeon, which took place yesterday at the Auction Mart, Bartholomew-lane. The sale of the freehold of Mr. Tyrrell's country residence, called East Lodge, situate at Acton, Middlesex, of which Mr. Tyrrell held the lease, was advertised to take place by Mr. George Robins, and Mr. Tyrrell intended to become purchaser. About half-past two o'clock, Mr. Tyrrell, who had been visiting a patient in South-street, Finsbury, entered the sale-room, and gave some instructions to a gentleman whom he had deputed to bid for the property. While he was conversing with his friend in a cheerful manner, he was suddenly attacked with illness, and left the room. He had scarcely reached the door, when he was observed to stagger, and in attempting to lay hold of the banisters he fell. Several persons, and among others, Mr. Warrior, the porter of the Mart, raised him from the ground and medical aid was sent for, but long before any of the faculty arrived Mr. Tyrrell was no more. He gasped twice after he fell, and died in less than two minutes. Mr. Tyrrell was only 46 years of age. He has been many years connected with St. Thomas's Hospital and the Opthalmic Institution, and his practice was very extensive. Mr. Tyrrell had been for some time labouring under disease of the heart, and his sudden death was not altogether unexpected by his friends. The awful event created a great sensation in the auction-room, and the sale of the East Lodge Estate was in consequence postponed by Mr. Geo. Robins, who said as he was perfectly aware that the deceased gentleman had attended for the purpose of purchasing the freehold, he thought he should be wanting in feeling if he submitted it to public competition under the circumstances; and he should, therefore, with the approbation of the gentlemen present, take upon himself the responsibility of deferring the sale till further notice. The body of Mr. Tyrrell was removed from the Auction Mart in the evening, and conveyed to his late town residence, 17, New Bridge-street, Blackfriars.—*Daily Paper.*

PERISCOPE OF THE WEEK.

Prussic Acid.—M. Bonjeau has ascertained that animal substances distilled in a sand-bath in water, at a temperature of 212 deg. to 248 deg. Fahrenheit, will sometimes yield a small quantity of prussic acid combined with ammonia.

Hepatic Abscess.—Mr. Woods, of the Madras Medical Service, after having passed 21 years in India, returned to England, where he was soon afterwards seized with hepatic derangement. He had previously been dyspeptic, but had never suffered from any acute tropical disease. The symptoms were soon followed by enlargement of the organ, which was of a considerable size, and the seat of obtuse pain, when he consulted Mr. Martin. It was hard and painful when pressed, and there was a distinct and separate tumour of the cœcum, the health miserably reduced, pulse 96, bowels constipated, no rigors nor cold sweat, urine scanty and high-colored. From the measures then adopted, some relief was experienced; but having committed an indiscretion with respect to using mercurials while in the country, Mr. Woods got worse, and when again seen by Mr. Martin, he thought he could perceive fluctuation in the tumour. The patient's emaciation was extreme, pulse 120, with slight delirium, no rigors nor cold sweats, tongue bright red, dry, and excoriated. There was much pain in the tumour, especially about its centre, indicating inflammatory action in its peritoneal surface, and a probable adhesion of it to the parietes of the abdomen; for there was a distinct hardness around the centre of four or five inches in extent, and alteration in the position of the body caused none in the site of the fluctuation. On consultation with Dr. Johnson and his son, it was determined to open the abscess, which they all agreed had formed, as affording a remote chance of preserving life. The operation was performed by Mr. H. Johnson with an ordinary trocar, an exploratory puncture having been previously made with a grooved needle. About six ounces of flaky viscid pus escaped. It afforded transient relief, but the patient gradually sunk, and died in a few days The examination of the abdomen shewed the liver much enlarged, forming a tumour of some size extending into the left hypochondrium, and downwards, considerably below the umbilicus; its peritoneal covering adhered firmly to the parts with which it was in contact. The increased size of the liver depended principally upon enlargement of the left lobe. On examining the opening which had been made during life, it was found to lead into a considerable cavity, situated upon the upper surface of the right lobe of the liver near its free margin, bounded by dense and firm adhesions which had taken place between the peritoneum covering the liver and that lining the parietes of the abdomen; the abscess, however, extended into the interior of the substance of the liver, by a large ulcerated opening, and had made its way also to the under surface of the viscus, forming a large collection of matter in the situation of the gall-bladder, no trace of which could be discovered, its place being entirely filled up by the pouch of matter. On tracing the gall duct from the intestine, it was found to proceed direct to this cavity, from which it was merely separated by a barrier of lymph. The abscess had also made its way by ulceration into the cœcum, a large opening into which existed nearly opposite the ileo-cœcal valve. The structure of the liver was somewhat indurated—the right lobe presented a curious lobulated appearance, being divided into two or three smaller lobes. The kidneys were healthy, as also the lungs, the valvular apparatus of the heart and great vessels; the heart was, however, rather larger than natural, and loaded with fat. The body was much emaciated.

The Mortality in Parisian Hospitals after Operations.—M. Tessier is of opinion that the high mortality in the Paris hospitals after important operations, is, in a great measure attributable to the erroneous notions which are held on the subject of purulent infection. Yet, he says, it would be most unjust to accuse our surgeons of wilful indifference or cruelty, because the theory, which they have adopted on the question, directly and logically leads to the conclusion that the operation is unquestionably the cause of the patient's death. Although well aware of the extreme peril of great operations in our hospitals, it seems always to be expected that each case will be more fortunate than that which preceded it, that the union of the wound will take place by the first intention, that the ligatures will not include any veins, and that any consecutive inflammation will be at once detected and subdued. M. Tessier attributes the disease genedally to the influence of hospital malaria.

Arsenic in Skin Diseases.—There are several diseases, the co-existence of which, with an affection of the skin, should contra-indicate the employment of the preparations of arsenic, the chief of which is the irritative or inflammatory gastric dyspepsia; that form of indigestion which is characterized by slow and painful digestion—by a sensation of heat and oppression at the epigastrium, increased by food, by the pressure of the hand or of the clothes—by thirst, dryness of the mouth on waking, a sensation of heat and stiffness about the eyes, a sharp pulse, rather high-coloured urine, unsound, unrefreshing sleep, irritability of temper, more or less lassitude, and a costive state of the bowels. This state of the stomach is often accompanied by a papular and scaly condition of the skin, something between lichen and psoriasis, which might be thought to indicate these remedies in a peculiar manner, but which would certainly, in such a state of the system, not be benefitted by their employment, whilst the irritation of the gastric mucous membrane would infallibly be much increased. Any other local inflammatory condition of the system, or the supervention of phthisis will contra indicate the employment of so powerfully stimulating a tonic as arsenic.

Animal Heat.—M. Virey concludes that the vital force, or central nervous energy, has more to do with the production of animal heat than the consumption of carbon at the lungs, and this for three special reasons; 1st, because a fecundated egg resists a freezing temperature longer than one which has not been fecundated; 2d, that a hybernating insect, reptile, or animal, or even trees during winter, by the sole influence of a vital power, resist a freezing temperature, whereas the same animals, if dead, would be ins'antly frozen; 3d, that many mammalia and birds keep themselves warm even in the most rigorous winters under the Pole, not in consequence of a greater amount of oxygen consumed, nor by a greater amount of muscular activity, but in consequence of a more abundant, highly azotized, or animalized nourishment.

Chilblains.—M. Lejeune recommends an embrocation for chilblains, prepared as follows: 3 scruples of camphor, dissolved in 16 scruples of the tinctura benzoes, to which is to be added, triturating carefully, 16 scruples of hydriodate of potass, 32 of the liquor plumbi acetatis, and 64 of rectified alcohol, diluted with rose-water. 32 scruples of animal soap are next to be dissolved in 64 of alcohol, diluted with rose-water, at a gentle heat, and the solutions mixed together before the latter gets cool. This embrocation may be scented with a few drops of any essential oil, and is then to be put in large-mouthed bottles, corked, and sealed. It is used in frictions night and morning.

Signs of Death.—Dr. Deschamps says, that a greenish blue color, extending uniformly over the skin of the belly, is the real and certain sign of death, and never occurs in any case of merely apparent death. The period at which this sign appears varies much; but it takes place in about three days under favourable circumstances of warmth and moisture.

Exostosis of the Sacrum.—In Dr. Haber's case of difficult labour from an exostosis of the sacrum, the history of which is contained in an inaugural dissertation published at Heidelberg, 1830, the disease followed a fall upon the ice some years before, when the woman was carrying a heavy load upon the head. This accident was followed by a pain in the back and pelvis, which gradually disappeared. She married—became pregnant, and during labor, the whole cavity of the pelvis was found to be filled up with an osseous tumour, which grew from the sacrum. The Cæsarean section was performed, but the child was putrid, and the patient died soon after the operation. The length of the tumour was seven inches, and its greatest breadth six. The highest part of it hangs over the place where the third lumbar vertebra is joined with the fourth. The lowest part of the tumour is distant about two lines and a half from the point of the sacrum. From the posterior surface of the body of the os pubis, the tumour is only one line and a half distant. Towards the anterior part, and downwards between the tumour and bones of the pelvis, the space is eight or ten lines. The brim of the pelvis was almost completely filled up with the tumour. From the history, therefore, it was evident there was no other method of delivery than by the Cæsarean section, but if the existence of the tumour had been known during pregnancy, the induction of premature labour, as soon as pregnancy was detected, might have obviated the necessity of the operation.

Acid Saliva.—The saliva is impregnated with lactic acid, chiefly in gout, rheumatism, ague, diabetes, and gastro-enteritis; with acetic acid in aphtha, scrophula, scorbutus, small-pox, protracted indigestion, and after the use of acescent wines; with hydrochloric acid in simple gastric derangement from immoderate or improper animal food, and with uric acid in gouty affections. When oxalic acid exists in the saliva, its presence will most likely be dependent upon defective digestion, or imperfect assimilation.

Premature Labour.—Dr. Lee observes that he has been recently informed that premature labour may be induced by the introduction of a large, soft, dry sponge, covered with lard, into the vagina, and firmly pressed up against the os uteri, without forcing the sponge into the uterine cavity. He observes that he has not had any experience with it, but if it should be always successful, there can be little doubt that it will possess great advantages over all the other means which have hitherto been employed for this purpose.

Tympanitis.—Velpeau states, that about two years ago, he had a case of tympanitis, which resisting every other means, he plunged a trocar into the abdomen, into an intestine, and gave passage to a large quantity of gas by the canula. In the course of five days he made four different punctures. The man recovered.

Menstruation.—M. Brierè de Boismont in his recent prize essay on menstruation, gives the history of an old maiden lady who died, at the age of 72, up to which time the catamenia had continued to return (very irregularly indeed) from her 24th year, in which they first made their appearance.

FUNGOID GUMS.—Mr. Koecker was consu'ted by a gentleman at Ealing, 60 years of age, who had been bed-ridden for six months, and was reduced to a state of great emaciation and debility. On examining his mouth, it presented a most forbidding appearance; all the teeth blackened or discolored, and much furred with tartar, were imbedded in, surrounded and surmounted on all sides by an irregular, fungous, and partially ulcerated, mass of a deep red, almost livid appearance, extending above half an inch in breadth on both sides of the teeth, and half an inch in depth. The whole mouth was in a state of great inflammation, especially the diseased parts, and excessively painful even to the slightest pressure of the tongue, and his breath was extremely offensive. The teeth were nearly all sound and firm. Mr. Koecker, considering that such a state of the mouth generally arises from a diseased condition of the roots of the teeth, or their sockets, or other osseous structure, advised first, the immediate removal of the cause of irritation, the teeth, and afterwards of the excrescences, to which a ready assent was given;—29 teeth were accordingly extracted in the course of a few minutes, and many of them were found to be diseased—some affected with caries, some with denudation of the periosteum and sockets, and some with exostosis in various stages. The fungoid mass was removed with strong scissors eleven days after this, with evident advantage, the patient rapidly improving in health afterwards, so as not to require to be seen again by Mr. Koecker.

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	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
20	0 19 1	1 5 6	1 11 11	1 18 4	2 4 9
30	1 6 6	1 14 7	2 2 8	2 10 9	2 18 10
40	1 13 6	2 5 7	2 17 9	3 9 11	4 2 1
50	2 16 3	3 10 10	4 5 5	5 0 0	5 14 7
60	4 8 11	5 17 4	7 5 9	8 14 2	10 2 7

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 193. Vol. VIII. LONDON, SATURDAY, JUNE 3, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S.; L. & E., &c. &c.

LECTURE VIII.

The class of organic products which I shall bring before you to-day are in a manner connected with those of the preceding lecture; they are without nitrogen, and very inflammable; they are not, properly speaking, alimentary, but are interesting from their important applications to the purposes of the arts, and as articles of the Materia-Medica. I shall commence with a short account of the *resins* and of the volatile or *essential oils*.

The resins are a well known class of bodies, exhibiting certain characters in common, but presenting also a variety of peculiarities, some of them referable to a distinct composition, and others to the presence of certain bodies with which they are combined, or accidentally mixed. I shall, however, take common resin, or *rosin*, as it is usually called, as a type of the family. It is produced in great abundance by a number of trees of the fir tribe, the pines, and it usually exudes from the tree mixed with a quantity of a peculiar volatile oil, forming what is known in commerce under the name of *turpentine*, of which there are many varieties, such as common, Venice, Chian, Canadian, &c. By distillation with water the oil is obtained from these substances thus exuded, and there remains in the still, a resinous body. In the state in which you usually see this resin it contains a quantity of water, which gives it its peculiar opacity, and a yellow colour; but if it be carefully melted, it loses this water, and becomes a brown or blackish transparent substance, known under the name of *colophony*. It gives a good illustrative instance of the characters of a resin *in this state*. Taking these bodies generally, we distinguish them by being fusible, inflammable, insoluble in water, and soluble in alcohol and ether, and in alkalies. The alcoholic and oily solutions of the resins constitute *varnishes*, of which there are many varieties.

The resins are capable of combining with bases, and in this way constitute a class of compounds, which may be termed *resinates*, the resin in fact performing the part of an *acid*. We also find that many of the resins formerly considered as simple proximate principles consist in fact of two distinct resinous bodies, one of which, being insoluble in cold alcohol may by that means be separated from the other, which is soluble in cold alcohol; of all this, colophony, or common pine-resin, furnishes a good and characteristic instance. If we digest it in cold alcohol of moderate strength or purity, that is having a specific gravity of about 860, we find that a part only is soluble; this soluble portion has been called resin A, and the insoluble portion resin B; but perhaps we had better designate the former as *pinic acid*, and the latter as *silvic acid*. Pinic acid may be precipitated from its solutions by an alcoholic solution of acetate of copper, in the form of a *pinate of copper*, which may be dissolved in pure alcohol, and precipitated in the form of a resinous powder by muriatic acid; when thoroughly washed and dried it yields a colourless solution in alcohol, which reddens litmus, and forms soluble salts with the alkalies, and insoluble salts with the earthy and common metallic oxides. *Silvic acid* crystallizes out of its solution in absolute alcohol, and yields salts analogous to the pinates. Now, notwithstanding these distinctive individual characters of the pinic and silvic acids as to solubility and crystallisability, they include the same number of ultimate atoms of carbon, hydrogen, and oxygen, and are, therefore, *isomeric*, their common formula being C_{40}, H_{30}, O_4. Thus then, in regard to colophony, you observe it includes two isomeric resins, each acting the part of an acid; the one only obtainable in an amorphous state, but the other crystallisable. There are but very few of the resins thus susceptible of crystallisation, but by far the greater number of them are separable into two, or more, distinct forms of resin, which are generally isomeric. The combinations of the resins with the alkalis are not applied to any useful purpose, if we except the manufacture of soap; *yellow soap* deriving its peculiarities from a large addition of resin.

It would appear from the experiments of Professor Johnstone, that a general analogy pervades the resins in respect to their ultimate constitution, and that they may be for the most part regarded as oxides or hydrurets of a basic hydro-carbon, represented by C_{20}, H_{16}; to such, or to a similar hydro-carbon (C_{40} H_{32}) we may apply the term *retinyle*.

I mentioned in the last lecture that when the fatty bodies and fixed oils were subjected to destructive distillation very complicated products were obtained, which, however, when carefully examined, contained certain definite hydro-carbons: similar, but even more complicated results, attend the destructive distillation of bitumens, and more especially of coal, the products in the latter case being rendered peculiarly complex in consequence of the presence of nitrogen and of sulphur, whereas in the oils and fats we have only to deal with hydrogen, oxygen, and carbon; so also with regard to the resins.

The history of the hydro-carbons forms an important feature of organic chemistry, both in its practical and theoretical relations, and this may not be an improper place to say a few words upon the subject generally.

You will recollect that the atomic equivalent of hydrogen being $= 1$, that of carbon is $= 6$; this, therefore, will be the general clue to the composition of the hydro-carbons. Now, these compounds are not only very numerous, but there are many among them which are isomeric, their distinctive characters arising not out of dissimilar relations of the carbon to the hydrogen, but out of the number of atoms of each, which constitute one atom of the compound. This will be apparent by a comparison of olefiant gas, or bihydro-carbon, with etherine, or quadrihydro-carbon; in the former we have 2 atoms of carbon combined with 2 of hydrogen, and in the latter 4 with 4; that is, one volume of olefiant gas includes 2 atoms of carbon and 2 of hydrogen, and is represented by the formula C_2 H_2; and one volume of etherine includes 4 atoms of carbon and 4 of hydrogen, and has, therefore, the formula C^4 H_4. In olefiant gas, therefore, $6 \times 2 = 12$, carbon is combined with $1 \times 2 = 2$ hydrogen, and its equivalent is 14; but in etherine $6 \times 4 = 24$; carbon is combined with $1 \times 4 = 4$ hydrogen, and its equivalent is 28, the density of etherine vapor being exactly double that of olefiant gas; and the respective densities of hydrogen, olefiant gas, and etherine, being as 1, 14, and 28. Now, I will give you the formulæ of some other hydro-carbons. They are put down in this table.

C H	Methyle.
C H_2	Fire-Damp.
C^2 H_2	Olefiant Gas.
C^4 H^1	Acetyle.
C^4 H_4	Etherine.
C^4 H_5	Ethyle
C^5 H_4	Citryle.
C_6 H_3	Bicarburet of hydrogen.
C_6 H_5	Naphtha.
C_{10} H^4	Naphthalin.
C_{10} H_8	Camphyle.

I might add several other hydro-carbons, actual and hypothetical, to this list, but it will suffice for our present purpose of shewing the atomic relations of some of the principal of them, and of elucidating the part which they perform as *bases*, in reference to certain of their compounds, which are afterwards to come before you; and now I will select out of this list a gaseous, liquid and solid hydro-carbon as types of the family, and as enabling me to show you their leading chemical characters.

As a specimen of a *gaseous hydro-carbon*, let us take olefiant gas (C^2 H^2) which I obtain from a mixture of two measures of sulphuric acid and one of alcohol; upon the application of heat several products are obtained, among which the only one permanent over water is olefiant gas; it is, however, well to wash it by lime water, or a weak solution of potassa, and it may then be considered as pure. It burns, as you observe with a brilliant flame, rather inclined to smokiness. When mixed with air or oxygen, in due quantity, it forms explosive mixtures, the results of its combustion in those cases being carbonic acid and water. If I mix it with thrice its volume of oxygen it yields 2 volumes of carbonic acid and water. If I mix it with twice its volume of chlorine, and immediately inflame the mixture, the hydrogen combines with the chlorine to form muriatic acid, and the charcoal is separated in the form of dense black soot; but if, instead of igniting this mixture, I leave it standing over water, absorption ensues, and a triple compound of chlorine, hydrogen, and carbon, is gradually formed, which drops through the water in the form of a dense liquid, looking like *oil*; hence the term of *olefiant gas* applied to this peculiar hydro-carbon.

[Mr. Brande here shewed the production of water and carbonic acid, by burning olefiant gas in oxygen, and set fire to a mixture of chlorine and olefiant gas in a tall glass jar, which burned with a dull red flame, producing a peculiar whistling noise, and throwing out a shower of black soot; he also shewed the production of the oily compound.]

There is another property of *olefiant gas* which we sometimes avail ourselves of in analysing mixtures of this with other gases, viz., that it is absorbed by, and combines with, sulphuric acid. I have, however, shewn you enough to identify this gas, and to recognise gaseous hydro-carbons generally.

Now, as an instance of a *fluid hydro-carbon*, I might select naphtha, or caoutchisine, or any of the curious volatile liquids which are produced during the destructive distillation of the resins or oils, but I shall prefer *oil of turpentine*, which, when carefully purified, is a compound of 10 atoms of carbon and 8 of hydrogen $= C_{10}$ H_8: its equivalent, therefore is 68: this being the case the density of its vapour is of course very considerable, being to hydrogen as 68 : 1, and to air as 474: 100. In order to burn it, therefore, a very large supply of oxygen is requisite, and under such circumstances it yields a most splendid flame, but with an undue supply of air its flame is red, and very smoky.

[This was illustrated by a lamp, of a peculiar construction, fed by oil of turpentine, and burning with extreme brilliancy when air was duly admitted, but when only imperfectly supplied, it emitted a quantity of black smoke.]

The results of the perfect combustion of these hydro-carbons are, of course, as in the former cases, carbonic acid and water, and in their quan-

titative analysis we learn the proportions of hydrogen and carbon which they include, by those of the water and carbonic acid resulting from their complete oxidizement.

Lastly, as to a *solid hydro-carbon*, let us take *naphthalin*; it is a beautiful white flaky crystalline substance, formed in considerable quantities in our coal-gas works; it has a peculiar aromatic, but somewhat overpowering odour; it requires an enormous quantity of oxygen for its perfect combustion, a circumstance at which you will not be surprised, when you learn that one volume of its vapour includes 10 atoms of carbon and 4 of hydrogen, its formula, therefore, is $C_{10}\ H^4$, and the density of its vapour 64 : 1 compared with hydrogen; or about 450 to 100 compared with air. That singular body *caoutchouc*, or india-rubber, when freed from impurities, is also a hydro-carbon, and when subjected to a high temperature, a volatile and highly inflammable oily liquid passes over, of a very strong and disagreeable penetrating and diffusible odour (caoutchisine) the formula of which is $C^4\ H^4$, and which, therefore, corresponds to what I have elsewhere called *etherine*.

I must not here suffer myself to diverge into the philosophy of flame, but may remind you that all our common combustibles used as sources of light, oils, tallow, fat, spermaceti, wax, coal-gas, and so on, furnish so many hydro-carbons, which are burned in their respective flames; and the luminosity and perfection of these flames depend upon the presence of a due proportion of carbon, the more the better, provided it does not render the flame smoky, or so accumulate as to involve the necessity of snuffing; all which is beautifully and philosophically effected in our various lamps, candles, and gas-burners.

[Mr. Brande illustrated these points by a variety of experiments, in some of which he set out with the flame of hydrogen, and gradually increased its luminosity by blending various hydrocarbons with it till it began to yield a smoky flame; and in others he used a common gas flame, shewing the manner in which its illuminating power was improved by the addition of certain vapours of hydro-carbons, and especially by passing it over coal-naphtha, as described and employed in Mr. Lowes' patent.]

In concluding this part of my subject, let me call your attention to this tabular view of the value of several sources of light in common use; it is founded upon a series of experiments lately made, in conjunction with Mr. Cooper and Mr. Phillips: it shews the quantity of light emitted by different candles, as compared with the hourly consumption of the combustible.

	Value of Light.	Consumption per hour.
Spermaceti candle	100	140grs.
Composition ditto	66	164
Stearine ditto	66	150
Wax ditto	66	134
Coco Stearic ditto	55	157
Tallow ditto	47	125
Sperm oil, burned in Argand Lamp	1050	800

The remaining substances which come under our present notice, are the *volatile* or *essential oils*. These remarkable compounds are the source of the varied odours of plants: they are usually obtained by distilling the plant with water, the vapour of which carries the odorous oil over with it, and as these oils are but little soluble in water, they separate from that liquid, either floating or sinking as their specific gravity is below or above 1,000: the small portion, however, which is retained by the water gives it fragrancy, and other medicinal qualities; and hence the use of these distilled waters as perfumes, and in medicine. Take rose-water and peppermint-water as samples. These oils are for the most part liquid; when solid they are often called *camphors*, or *stearoptens*: they are soluble in ether and in alcohol, and highly inflammable. As regards their ultimate composition, they may be classed into two groups; those which do, and those which do not, contain oxygen. The former present many curious varieties; the latter come under the general definition of *hydro-carbos*, the history of which I have already given you. Many, and probably nearly all of the former of these oils, when acted upon by caustic potash, or saponified as it were, are resolved into two distinct compounds—one of which is destitute of oxygen, and, therefore, a *hydro-carbon;* the other contains oxygen, and acts the part of an acid. These oils are so numerous that I must not pretend even to mention all of them, but I must select two or three for your especial notice, in consequence of their extraordinary characters and the peculiar circumstances which attend their production: one of the most remarkable of these is what is called, *oil of bitter almonds*. The bitter almond, so long as you keep it out of the contact of water, has no smell, and probably, therefore, no taste, and the oil that it yields by pressure is perfectly insipid and inodorous, and in all respects the same as that obtained from the sweet almond. But now, chew the almond, or, what amounts to the same thing, rub it in a mortar with a little water, and it presently acquires not only odour and flavour, but hydrocyanic acid also makes its appearance, and hence the poisonous quality of the bitter almond and some other similarly constituted parts of plants: the history of this extraordinary change is this—the bitter almond contains among other things a peculiar principle which has been called *amygdalin*, and which may be separated from the kernel after the fixed oil has been abstracted, by the action of alcohol: it is a white, crystallisable, insipid, and inodorous substance, soluble in water and in hot alcohol, and is represented as respects its ultimate constituents by the formula C_{40}, H_{27}, O_{22}, N. When acted upon by alkaline bases, it evolves ammonia, and is converted into *amygdalic acid*, an acid which does not contain nitrogen, and the formula of which is C_{40}, H_{26}, O_{24}. Now, there is another principle contained also in the bitter almond, but common to it and the sweet almond, and other seeds, which has been called *emulsin;* and amygdalin, when in the contact of emulsin and water, is gradually resolved into a set of new products, viz. into hydrocyanic acid, volatile oil, sugar, formic acid, and water. We owe the history of this curious and complicated transformation to Liebig and Wöhler. I have represented its details in this table, which shews you the resolution of 1 atom or equivalent of amygdalin, into 1 of hydrocyanic acid, 2 of volatile oil, 1 of grape sugar, 1 of formic acid, and 5 of water.

	Atoms of Carbon.	Hyd.	Oxyg.	Nitro.
1 Hydrocyanic acid	2	1	0	1
2 Volatile oil	28	12	4	0
1 Sugar	6	7	7	0
1 Formic acid	4	2	6	0
5 Water	0	5	5	0
=1 Amygdalin	40	27	22	1

There is only one of these products which requires any additional remarks, namely, that which I have called *volatile oil*. When freed from hydrocyanic acid it is fragrant, and has a hot, aromatic flavour; it is very soluble in alcohol, and triflingly so in water, and when exposed to air or oxygen, it gradually absorbs it, and becomes converted into *benzoic acid*. Now, the ultimate elements of this oil are C_{14}, H_6, O_2; those of Benzoic acid are C_{14}, H_5, O_3, so that the oil, you see, passes into benzoic acid, by the loss of an atom of hydrogen and the gain of an atom of oxygen. Now, if we choose to assign the term, *benzyle*, to a hypothetical base, represented by C_{14}, H_5, O_2, then benzoic acid will be an *oxide* of that base; and what I have called essential oil of bitter almonds will be a *hydruret* of the same base.

I have taken up so much of your time in describing these amygdaline metamorphoses, that I must not venture upon the details of an analogous case presented by the *mustard-seed*, the acrimony of which is due to a similar formation of volatile oil, not pre-existing in the seed, but resulting from the action of emulsin, upon a peculiar principle, which has been termed *sulphosinapisin*, and which contains sulphur as one of its ultimate constituents: the volatile oil of mustard having the curious and complex formula, C_{32}, H_{20}, O_5, N_4, S_5.

The essential oil of the *spiræa ulmaria*, or *meadow sweet*, has also been the source of some very interesting discoveries, more especially in reference to its artificial production by distilling salicine with chromate of lead and sulphuric acid.

Among the essential oils there is one of peculiar interest, namely, the ancient *oil of spikenard*. It has been supposed to be the product of a graminaceous plant, the *nardus indica;* but, according to other authorities, it is derived from one of the valerianaceæ (*nardostachys jatamansi*). From an interesting memoir upon this oil, by Mr. Hatchett, it appears to be known in India under the name of *rhonsee te keel*, which, I believe, signifies *oil of grass*. The sample of this oil which I have here, was brought from Malwah, in 1830, by Mr. Swinton; its fragrancy is peculiar and very diffusive; chemically speaking, it belongs to the class of oxides of hydrocarbon. Mr. Hatchett states that but little of this oil is consumed by the natives, the greater part being now, as formerly, sent as an article of commerce to Arabia, whence it found its way to Tarsus, Laodicea, and other places in Syria and Asia Minor, where the celebrated ointment was prepared, which consisted of a mixture of this oil with myrrh, balsam of Gilead, and certain spices. Hippocrates, Celsus, and Galen, recommend this oil as an external and internal remedy; the latter is said to have successfully employed it in curing the Emperor Aurelius of an attack of cholera. The perfume of the spikenard ointment is emphatically alluded to by St. John, "Then took Mary a pound of ointment of spikenard, very costly, and anointed the feet of Jesus, and wiped his feet with her hair, *and the house was filled with the odour thereof*." The value of the ointment is recorded as follows:—"Then saith one of his disciples, Judas Iscariot, Simon's son, who should betray him, why was not this ointment sold for *three hundred pence*, and given to the poor?" Now, although the *denarius* is here translated *penny* (and also elsewhere), it was, in fact, quite another coin, its real value being 7½d. of our money, and its weight the eighth part of an ounce of silver; at least, in the reign of Vespasian, an ounce of silver was coined into eight denarii. A pound, therefore, of the ointment of spikenard being valued at 300 *denarii*, would be worth £9. 13s. 9d., a large sum in a cheap country like Palestine, where a person might live luxuriously on one denarius per day; and it therefore follows, that the two *denarii* stated in the parable to have been given by the good Samaritan, being equal to 1s. 3½d. of our money, were fully adequate to supply the wounded man with all requisite nourishment and comfort for more than two days, when he probably would have recovered from the injuries he had sustained, and would be enabled to resume his journey.

With this extract from Mr. Hatchett's memoir, I shall conclude this part of our subject, and now proceed to the consideration of two other important groups of organic principles—namely, the acids, and alkalis. The latter are sometimes specifically termed *vegetable* or *organic* alkalis, to distinguish them from ammonia, and the inorganic alkaline bases,—perhaps they are more conveniently designated *alkaloids*.

Now, as regards the organic acids, there are a few which contain nitrogen, but the greater number are ternary compounds of oxygen, hydrogen, and carbon: some of each of these groups have already been before you, and details respecting others I will reserve for future notice, selecting two or three of those which are ready formed in vegetables, for our present consideration, chiefly with a view of shewing you the contrivances we resort to, to separate and obtain them in a pure form.

Citric acid, for instance, exists in the juice of lemons, and some other fruits: in the lemon, however, it abounds, and from lemon juice it is obtained, first by forming a precipitate of citrate of lime, by adding chalk to the juice, and then decomposing the citrate of lime by sulphuric acid, so as to form sulphate of lime, and set the citric acid free. This latter is purified by successive crystallisations, and is a well-known article of commerce. But in the greater number of cases, the vegetable acids exist in plants in combination with *bases*, and more especially with potash and lime. Thus oxalic acid, to the artificial production of which I have before alluded, exists in the wood-sorrel (oxalis acetosella,) and other plants, as superoxalate of potash, and oxalate of lime; so also

tartaric acid is found in the grape, as *tartar*, that is, as a bitartrate of potassa. Now these acids may be isolated, by the process I have shewn you upon lemon juice, that is, by decomposing the oxalate, or tartrate of lime, by dilute sulphuric acid. In analytical operations there is a preferable mode of proceeding, which consists in precipitating the acid in insoluble combination with oxide of lead, and then diffusing the salt of lead through water, and subjecting it to the action of sulphuretted hydrogen: sulphuret of lead, which is insoluble, is precipitated, and the soluble acid is set free, and may be obtained by evaporating the filtered solution.

[Mr. Brande decomposed malate of lead in this way.]

The following are the formulæ of some of these acids:—

Citric acid	C_{12},	H_5,	O_{11}, $+3$ (H O)	Tribasic
Tartaric acid ..	C_8,	H_4.	O_{10}, $+2$ (H O)	Bibasic.
Malic acid	C_8,	H_4,	O_8, $+2$ (H O)	Bibasic.
Meconic acid ..	C_{14},	H,	O_{11}, $+3$ (H O)	Tribasic.

[Mr. Brande also exhibited a table of the transmutations of which the vegetable acids are susceptible, and by which they gradually pass into the simpler forms of formic, oxalic, and carbonic acids, but for this we have not space.]

Now, a few words with respect to the alkaloids: these remarkable bodies are the source of the activity of many of the most important medicinal agents, and poisons: thus the narcotic property of opium is due to *morphia*,—of hemlock, to *conia*,—the poisonous powers of nux vomica, and of aconite, reside in *strychnia* and *aconita*; the febrifuge virtues of the Peruvian barks, in *cinchonia*, and *quinia*, and so on. Now, these alkaloids exist in the plants in the state of soluble salts, combined with certain acids, which are also generally peculiar. These we separate by solution in water, or other proper solvents, and then the addition of a common alkali, ammonia for instance, throws down the alkaloid in the form of a precipitate, which is almost insoluble in water, but which alcohol or ether usually dissolve, and then they are purified by crystallization. They are generally intensely bitter, very active, and form soluble salts with the common acids, in which state of combination they are generally used in medicine. The value of sulphate of quinia, and of muriate of morphia, are well known. Conia is remarkable for its volatility, fluidity, and proneness to spontaneous decomposition. The remarkable circumstance respecting the ultimate composition of these alkaloids, is the presence of nitrogen as one of their ultimate elements. This table shews you the composition of a few of them: you will observe, that their equivalents are all very high.

Qninia..........	C_{20} ..	H_{12} ..	O_2 ..	N
Cinchonia	C_{20} ..	H_{12} ..	O	N
Morphia........	C_{35} ..	H_{20} ..	O_6 ..	N
Strychnia	C_{44} ..	H_{22} ..	O_4 ..	N_2
Veratria........	C_{34} ..	H_{21} ..	O_6 ..	N
Aconita	?			
Conia	C_{12} ..	H_{14} ..	O ..	N

[Mr. Brande concluded his lecture with a few general remarks on salicin, phloridzin, thein, caffein, and some other principles bearing general resemblances to the alkaloids, but apparently not acting as definite bases, and consequently not salifiable.]

Diagnosis of Hydrencephalus.—In a lengthy article on the treatment of rachitis and scrofula, Dr. Smyth re-produces an account formerly published by him of the existence and character of a murmur, or sound accompanying the cerebral circulation in certain conditions of disease in children, and which, he thinks, may be received either as a premonitory symptom of chronic hydrencephalus, or as a diagnostic sign of the actual existence of that disease in its most incipient state. He observes that it is always concomitant with and produced by a morbid action of the vessels of the brain, immediately preceding or associated with more or less dropsical effusion in that organ.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. Williams, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

We now come to the conclusion of the subject of croup, and to speak of the treatment. The treatment of the sthenic disease first requires to be noticed. In the early stage blood-letting is employed, but this is more applicable to cases occurring in the country; in large towns very few will bear it. It has a tendency to produce great prostration of strength. The most efficacious remedy is calomel, repeated every hour, as much as three or four grains at a time; and if the state of the bowels will bear it, a moderate use of tartar emetic, to promote the secretions, should be resorted to. These are the chief remedies. In the asthenic variety, and in the advanced stages of croup, we must not depress the patient too much; but in some instances advantage has resulted from the exhibition of emetics and some stimulant expectorants, as the tincture of squills and decoction of sennæ. There is a quesiton about the use of bronchotomy in this disease. We know that it is essentially serviceable in some cases of laryngitis, in giving breath to the patient. Experience in England is very much against the performance of the operation; it has in many cases been performed, but in scarcely any has it been attended with successful results; and the operation, in children, can scarcely be justified, except in hopeless cases. In France it has been performed in several instances; out of four so-called hopeless cases, three seem to have been successful. I do not, however, think that this is a fair comparison, for the French do not understand the advantage of the free use of calomel in this disease. Calomel after all is our sheet anchor in this disease, and many cases that have been saved by bronchotomy would have been saved by calomel. The comparison, however, with regard to the French, is scarcely to be relied on. The remedies used in France are not half so energetic as those of the English physician. There is also another reason why I do not think it safe to resort to this remedy. Look at the pathology of the disease. In laryngitis the inflammation and constriction is confined to the larynx, and the bronchial tubes are unaffected; but if asphyxia comes on, then they become affected, and this is a reason why in advanced stages of laryngitis this operation is not advisable. Croup affects the trachea, and also the branches of the bronchi; what good then can be expected to arise from bronchotomy in such a state as this? It is true that in all cases it does not extend very deeply, but there is a great probability of its doing so. This circumstance, taken in conjunction with the fact of the difficulty of the operation, the tubes being deeper seated and more vascular, and the trachea being much less developed in young subjects, will all materially impede the performance of the operation, and militate greatly against its efficacy. It is of especial importance to guard against relapse in this disease, to which there is great liability. Cold is the chief exciting cause of croup, and this should be guarded against by warm clothing, and protecting the child from the east winds.

We now come to another class of diseases, affections of the bronchial tubes, and which may extend from the nostrils to the ramifications of the bronchi. Under this head there are several distinct diseases, and I shall take first those in which there is a flux or catarrhal hæmorrhage,—the inflammation affecting the secretion. There is an affection called bronchorrhœa, a disease of the bronchial tubes, which comes under the head of fluxes. What I have said before, in reference to fluxes, under the head of general pathology, will apply here. This bronchial flux that I am now alluding to, comes on with paroxysms of dyspnœa, producing asthma. There is oppressed breathing, and after a while cough ensues, accompanied by a thin, frothy and viscid expectoration, frequently in great abundance. It has merely the appearance of diluted mucus, perhaps a little more saline than usual. Its liquidity and frothiness are dependant on its admixture with air. Sometimes a similar discharge takes place from the nostrils, accompanied by many of the symptoms of coryza; sneezing and coughing in paroxysms, &c. But this affection differs from the acute catarrhal disease in this respect,—that it is accompanied by fever, and it may go on for a long time before that copious discharge is produced which exists in the acute affection. The dyspnœa accompanying this affection is sometimes very great. By dint of coughing, the patient, when he possesses sufficient strength, can expectorate, and often does so in very large quantity. Sometimes the paroxysms are completely intermittent; and after a fit of coughing and expectoration, the patient may seem free from all disease. On applying the ear to the chest during the paroxysm, at the commencement of the disease, you hear various whistling and sonorous rhonchi, and a diminution of the natural respiratory murmur, indicating some constriction of the membrane, or a state dependant on congestion, or effusion under the tissues. But very shortly, and sometimes even at the first onset, there is a mucous and crepitating rhonchus, together with a diminution of the respiratory sound. On percussion, the stroke-sound is generally very good, but sometimes in very severe or lengthened paroxysms, the posterior and lower parts of the lungs and chest seem somewhat dull: this implies a degree of emphysema in the lung. Some kinds of bronchorrhœa are called constitutional; these are common in persons of neglected habits, and in whom the circulation is weak and languid. The secretions may be disordered, or even arrested; it may be the function of perspiration, or else the urinary or digestive organs that are disordered, in connection with a weak circulation. These persons are not always the weakest in appearance; sometimes they are rather plethoric, labouring under a species of asthenic plethora. Gouty persons are often the subjects of disease, inasmuch as the secretions are in them apt to be defective. The usual exciting causes are those circumstances which disorder the circulation at once, such as sudden exposure to cold, or transition from cold to heat, various irregularities of diet, and confinement in close rooms.

There is a variety between this and the acute catarrh, called the hay asthma, which consists in a great difficulty of breathing, with profuse expectoration, coming on in the summer time; it is said to be induced under circumstances where the patient has inhaled the smell of new mown hay, and the popular notion is that it arises from the aroma of the new made hay. Sometimes it is accompanied by fever; at other times there is no febrile action attending it. It is supposed to arise from the adhesion of the dust or pollen of the hay to the bronchial lining, and it is a curious fact that the expectoration in these cases presents, not merely the epithelial scales generally found in mucus, but also little serrated cells in great abundance; which seems to prove that the disease has an animalcular origin. The peculiarity of this disease seems to be derived from this fact; and in some degree it does resemble those diseases that are sometimes produced by animalcula.

In many cases bronchorrhœa is secondary to other diseases, and we find fluxes induced by various causes, which obstruct the circulation. Obstructions of the pulmonary circulation are accompanied by paroxysms of bronchorrhœa. Disease of the heart is often likely to produce it;—such as diseaso obstructing the passage of the blood through the right ventricle, or from the left ventricle into the aorta; also any obstruction in the lungs, or tuberculous formations; all these are accompanied by bronchorrhœa in a great degree. In the early stage of phthisis, the expectoration is of this character; more of a liquid flux than the mucus depending on inflammation. Another case in which this disease is known to occur in a very great degree, is malignant disease of the bronchial glands, which has the effect of obstructing the circulation through the lungs to a very singular extent. This lesion often causes hydrothorax. You generally find that cases of flux from disease of the bronchial lining membrane come on in paroxysms. Sometimes this affection is aggravated by one of an opposite character,—the

dry catarrh. It seems a paradox to say that there can be dry catarrh and humid catarrh in the same subject; but this may, nevertheless, occur. With the mucous expectoration, there are little thick pellets of mucus. This complication sometimes proves fatal. Miliary tubercles have occasionally been found in the lungs of persons dying from this disease; in a few, disease of the heart, and in others, malignant disease of the bronchi. All these cases prove the nature of the disease, and that it is a flux and not an inflammation.

As to the prognosis, it is not very serious in itself; but remembering that it may occur in connection with organic disease, it ought to be looked on with suspicion. It is sometimes fatal from the violence of the paroxysms; at any rate, its long continuance greatly weakens the system, and produces a very debilitated state. Sometimes the occurrence of this humid asthma is a prelude to a sort of break-up of the constitution. Now this break-up of the constitution is merely symptomatic of internal organic disease, where it seems that the whole constitution is breaking up, and not any one part in particular. You generally, however, find organic disease of one or of several organs. This may arise from the heart becoming extensively diseased, and manifesting that disease more and more as the subject gets old and feeble; and it may be that, very frequently, there is granular degeneration of the kidney, acting upon, and, in a great degree, producing a peculiar change in the character of the blood; reducing not only the red particles of the blood, but diminishing also its albuminous portion, thus rendering it poor and watery. This, however, may go on for a long time, gradually, without injuring the health materially. But the disease manifests itself unexpectedly, from sudden exposure to cold, or a preexisting attack of bronchitis, with a disordered circulation; or else it terminates in an attack of dropsy. But this is rather the result of disease going on for a long period, and gradually altering the structure of the kidney; a disease not of immediate formation, but gradually developed; its effects, however, are often suddenly manifested under an accumulation of exciting causes, so that you find in many cases of disease of the kidney there is a sort of flux, with a copious expectoration. This, too, often occurs in conjunction with disease of the heart. When it occurs independently of organic disease, it may go on for a long time, rendering the patient excessively feeble, without proving fatal. I know several individuals who have been labouring under this disease for many years, the attack coming on more severely at certain times, and less so at others, but yet who are never free from some tendency to a stoppage at the chest, and who are always liable to it from any irregularity of diet, or sudden transition of temperature. You remember what I said under the head of fluxes; that where they become habitual and, as it were, established as a custom in the system, they are exceedingly difficult to be got rid of; the watery parts of the blood which ought to be excreted by the kidneys and the skin, naturally go to the relaxed membrane.

This will suggest to you the mode of treatment. The chief mode of treatment consists in various circumstances adapted to regulate the circulation, and drive off the flux from the parts where it exists towards other parts, and thus bring it to a termination at the surface; for this purpose diuretics should be used, and means to stimulate the cutaneous surface. Likewise, if the intestinal canal is disordered, and the bowels are costive, as is commonly the case, purgatives should be given The secretions of the upper part of the canal are often deficient, and great relief is afforded by the administration of emetics. Sometimes tartar emetic and ipecacuanha are useful, chiefly in cases where there is catarrhal inflammation. Besides these remedies, astringents, such as sugar of lead, sulphate of copper, and sulphate of zinc, are sometimes very useful, to restrain the copiousness of the secretion and the severity of the paroxysms. Opium also tends to check the bronchial secretion, and is frequently useful. But, generally speaking, it is more important to promote the secretion, and to stimulate the contraction of the bronchial tubes, so that the expectoration may be more complete. Anti-spasmodic remedies are, in many cases, exceedingly useful, as henbane, stramonium, belladonna, and other medicines of that kind. Attention to regimen is very important. The diet should be free from acids, vinegar, and so on, and crude indigestible food. The drinks, likewise, should be regulated. When the disease goes on long, you cannot restrain the patient from taking all kinds of liquid, but you may very much lower the amount of liquid he takes, especially all alcoholic drinks. Do not allow him to take much in the morning; it is of less consequence at night, when the skin should be kept warm. Keeping the skin warm is of the greatest use; and this may be done, not merely by warm clothing, but by habitual exercise. There is another matter which you all must anticipate; that is, inasmuch as the disease depends, in a great degree, on a want of tone in the circulation, tonics are often expedient, and for this purpose quinine is useful.

The next affection we have to notice is, dry catarrh; and I mention it now, because it appears to be the opposite of the last disease, and yet it resembles it in some respects. Dry catarrh is a very absurd name, for, although it is characterised by dyspnœa, or difficult breathing, there is an expectoration of firm, grey pellets of viscid matter, which varies very much in amount. You find persons often affected with dry catarrh in a great degree. Many persons wake in the morning and feel the chest very much stopped, with short breath, until they succeed in expectorating these soft, thick, pellets of mucus. This scarcely amounts to disease, yet I have been consulted frequently by patients with this sort of affection, fearing that they had got phthisis. If the phlegm sinks in water, it is considered very alarming, and sometimes there will be blood attached to it. A medical man came to me a few years ago, bringing a tumbler-ful of these pellets, perfectly bloody, and he thought he was in a consumption: he is, however, living now. The disease may be more severe than this; and sometimes it is accompanied by expectoration of a good deal of matter throughout the day, attended with shortness of breath. The asthma sometimes comes on in paroxysms, and depends partly on the shifting of the mucus, and its getting into some of the larger ramifications of the bronchi, and obstructing the passage of the air. Sometimes these paroxysms are brought on by the affection I last mentioned. Bronchitis may sometimes alternate with the dry catarrh. The slighter forms of disease may go on for weeks or months, and, in many instances, may not be accompanied by much cough, but merely by shortness of breath; but if bronchitis supervenes, the dyspnœa generally becomes more urgent. This is complicated with emphysema of the lungs, and they may, in fact, be said to go hand in hand. The tongue is generally swollen, and of a dark colour, and the bowels are very commonly torpid, together with the various indications of a weak state of the capillary circulation. The physical signs of this affection are, more or less complete suspension of the respiratory murmur in parts of the chest, and where the breathing is very imperfect, the sound is sometimes accompanied by a little clicking, or dry sonorous rhonchus, and sometimes without any; wheezing and the crepitant rhonchus are often heard after coughing, but there is an absence of the respiratory murmur in some parts, and yet those parts sound perfectly well on percussion. Various circumstances may be enumerated as predisposing to this disease, such as excess of diet, and suppression of perspiration, or of the other secretions: gout, too, wandering about in the system, and not declaring itself. Under these circumstances, there is a sort of asthenic plethora induced, where the blood is apt to become congested in particular parts. The sudden suppression of cutaneous eruptions will produce the same effect. These eruptions seem to be produced by a morbid condition of the blood; sometimes there is too much fullness, or there is an imperfect purification of the blood. Disorder of the digestive organs is particularly apt to produce it: sometimes it results more directly from obstruction and congestion of the bronchial membrane. This is its character,—a result of a general congestion from obstruction in the course of the circulation. Hence, obstruction to the passage of the blood through the heart, particularly its left side, will often cause congestion of the lung, or dry catarrh. You can understand that the albuminous nature of the flux, that sometimes takes place in a congested state of the bronchial membranes, depends, in a great measure, on the condition of the blood. With regard to the prognosis: although this disease is sometimes severe and obstinate, in consequence of its being connected with some organic affection, yet it is not often in itself dangerous. It is very true, that cases may be recorded, where a tough pellet of mucus seemed to be the cause of death, from inducing sudden asphixia; but this is an exceedingly rare thing; and unconnected with any other disease, this affection in itself is not very serious. The treatment will be, in a great measure, constitutional; the disease being principally dependant on the state of the circulation, and the general condition of the patient; therefore, constitutional treatment is to be had recourse to, in addition to every means adapted to relieve the membrane itself. The treatment for asthenic plethora is often used under these circumstances, and various means employed to diminish the fullness of the vessels, by promoting the secretions. Alternate doses of blue pill and colchicum, with antimony, answer very well. When there is congestion and imperfect secretion, blue pill, with iron, is more effective than colchicum. If the skin is dry, and there is deficiency of perspiration, I would rather give antimonials; but generally speaking, we may combine, with great advantage, these particular remedies in the same subject. It is under these circumstances that mineral, sulphurous, and saline waters, are extremely useful; and many persons habitually affected with shortness of breath, derive great advantage from going to Harrowgate, and drinking the mineral waters; the Cheltenham and Chalybeate waters are also useful. In some cases, quinine, iodine, and sarsaparilla, where the patient can bear them, seem to promote the circulation and the secretions. The diet is necessary to be attended to, and plain food only should be taken. With regard to the means for removing the congestion, you will bear in mind what I said about blood-letting, as a means of giving temporary relief. Alkaline remedies are employed to relieve the secretions; but whether they do it by giving a more alkaline quality to the blood, or by rendering the mucus more soluble, by correcting the disorder of the digestive organs, or lastly, by adding to the activity of the secretions, I have not time to enter into. It is, however, remarkable, that they act in these different ways at different times. Squills and ipecacuanha are found useful in these cases. Where spasm exists, inhalations, and smoking stramonium, are sometimes serviceable.

Bronchial hæmorrhage is the next subject we have to consider. This may be the result of fullness of the vessels, unattended by inflammation. Epistaxis should be mentioned together with this affection. The nasal membrane is sometimes affected by chronic cold in the head, and in some cases the affection is severe. I have seen, in instances of this kind, great benefit arising, not only from constitutional treatment, but from the use of silk, or Mackintosh cloth, lined with flannel, promoting the circulation throughout the whole surface, and acting thus as a derivant. I believe some advantage may be obtained from the direct application of astringents, though I have not had an opportunity of trying them. With epistaxis, hæmorrhage may, at the same time, take place from some portion of the bronchial membrane, and you must be microscopical physiologists to define the apertures, which the particles of blood get through. Sometimes, it takes place very copiously from the lungs. Epistaxis of the more alarming kind is generally preceded by heat, fullness, and headache; these are symptoms of congestion, or determination of blood, and hæmorrhage is a natural relief for it. The same thing may be said with regard to bronchial hæmorrhage. Blood sometimes is expectorated in considerable quantity, without there being any disease of the lung; and it arises from the state of the membrane, independant of any organic disease. Sometimes it is absorbed in the early stage of the inflammation.

Sometimes you find that, in irregular menstruation, the female spits blood in considerable quantities, but this does not necessarily imply disease; though I have seen cases where I have been convinced that the hæmorrhage was connected with the air-tubes and with disease of the lungs.

Hæmoptysis often occurs in females in whom the catamenia are irregular, and it is often a sort of index of disease. I have met with but few cases of this kind in which there has not been disease of the lung, and I always look upon them with suspicion whenever I meet them. Sometimes these hæmorrhages may be accompanied by a sort of mucous rhonchus, but there will be no crepitation, nor dullness. The treatment is the same as that of hæmorrhages in general. Epistaxis may be relieved by the application of cold in the first place; keeping the patient in an upright position, and not allowing him to stoop in the slightest degree; applying cold to the forehead and nostrils, as well as to the back of the neck, and in some cases it is necessary to plug the nostril. Powder of alum, or a solution of alum, may be introduced. Sugar of lead is also useful in hæmoptysis and bronchial hæmorrhage, and may be given according to the urgency of the case, combined with purgatives. To carry off any tendency to a recurrence of the hæmorrhage, or to prevent inflammation occurring afterwards, it is useful to give frequent purgatives in combination with salines.

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

French.—*On Hydropathy.*—Hydropathy, though but of few years existence, has already, from its numerous establishments, and the many and impartial evidences which are brought forward in its favour, acquired so much importance as to deserve particular attention. To remain silent, in presence of the numerous facts rising up on every side, would be no longer excusable. It becomes, then, our duty to study and discuss these facts, and by their rigorous analysis to ascertain the real value of this vaunted method. We shall first, then, sketch the history of this new practice, and afterwards describe its characters and utility.

The employment of cold water in the treatment of disease is not of recent origin. A distinguished Professor of Strasbourg, M. Boyer, has proved the application of this agent in very early ages. The able pamphlet of this physician, remarkable for its deep erudition, tends, in our opinion, somewhat to underrate the value of this mode of treatment; but still, in spite of this defect, it presents a mass of valuable information likely to guard the inquirer against too great a degree of credulity.

The ancients frequently employed cold water, both as a medical agent, and with a view to hygienic treatment. Without recording the recommendations and injunctions found in the bible, and in the Greek and Egyptian codes; without reproducing the opinions of Cæsar and of Tacitus, on the subject of the employment of cold baths, even in winter, a custom which they have attributed to the ancient races of Germany; without invoking even the authority of Hippocrates, of Galen and of the Arabians, as to the utility of cold water as a remedy in many diseases, it is easy to ascertain that the cold-water system has had innumerable partisans in almost all points of Europe during the course of the last two ages. Hoffman, for instance, has written a great eulogium in favour of cold water; Floyer, a celebrated English physician, went much further than Hoffman, in endowing this agent with an almost universal efficacy. Italy and France have, likewise, followed in the same course. Still the administration of cold water was in no-wise substituted for medical treatment; it was merely made secondary or subordinate in its application to the general principles of medicine. Modern hydropathy presents itself, however, under very different forms and auspices. It aims at supplanting the ancient medical art; it claims to adapt itself to all diseases without exception; its rejects all connection with pharmacy; it owns for its founder an almost illiterate peasant of Austrian Silesia. Let us examine in a few words the claims of this extraordinary personage, and the condition under which he has founded this new treatment.

Preissnitz, the son-in-law of a veterinary surgeon, and himself following the same calling, had for some time applied to horses the hydro-sudopathic treatment, which had been previously employed by some English horse-doctors. Being possessed of extreme sagacity, and of great powers of reflection, he attempted to apply this mode of treatment to some Silesian peasants and adopted it in his own person. Encouraged by almost unhoped-for success, he founded an hydropathic establishment at Grœfenberg, his native place. We shall subsequently speak of the principles of his practice. Grœfenberg, according to the recent report of M. Scoutetten, consists of about thirty houses scattered loosely upon the eastern face of a mountain rising over a small town of Austrian Silesia, named Freywaldau. The country is healthy, the air fresh and pure, the water excellent. Priessnitz himself knows nothing of medicine, and is scarcely able to read or write. His establishment, although previously in existence, has chiefly become of importance since the year 1829; we may give an idea of this by stating that in 1829, he received but 49 foreigners as patients; in 1832 he counted 118; in 1836, 469; and in 1840; 1576. At the present day, says M. Scoutetten, Grœfenberg has become the resort of incurables from all parts of the world. Priessnitz, notwithstanding the enormous fortune which he has amassed in a few years, maintains the most simple and frugal habits. He has recently become possessed of a considerable estate with the seignorial rights attached to it. We should add that although much opposed in the early period of his career by persons who objected to his right of following medicine without any kind of license, the Austrian government have accorded to him this right, in consideration of his services to humanity; and this upon the report of a physician of the Imperial Court sent expressly to inquire into the effects of his practice.

As a proof of the confidence reposed in his character, M. Scoutetten says, that about a year ago, when an Austrian officer wished to prolong his stay at Grœfenberg beyond the six months' leave granted to him, it was merely required of Priessnitz to make a declaration to that effect, when the leave was immediately prolonged. This is not all; the gratitude of his patients is expressed by evidences which it would be difficult to repudiate. Besides the fees, which have amounted to considerable sums, valued already at more than a million, he has received from personages of the highest distinction magnificent presents which adorn his saloon. Several even, with a view of transmitting to posterity the remembrance of the benefits which they have attributed to him, have erected monuments in attestation of their satisfaction and gratitude. Thus, we see on the bend of the mountain at that part facing Freywaldau, a lion of natural proportions, placed upon a large pedestal, all of cast-iron, upon which are engraved in letters of gold, inscriptions in honour of Priessnitz. Further on, towards the middle of the road leading from Freywaldau to Grœfenberg, a carriage-road laid down at the expense of the Prince of Nassau, there is erected a monumental fountain formed by a pyramid of granite; at the summit of which is a golden star, symbolical of the advent of hydropathy. On the entablature, which is of marble, we find an inscription in French formed in letters of gold.

Priessnitz speaks but little; he rarely gives the motives of his prescriptions. When a patient is brought before him, he quickly decides on what is to be done, although he is unable to give any scientific reasons for the treatment which he pursues. He makes no note of the diseases which he observes nor of the means which have proved most successful; he trusts completely to his memory, which, it is asserted, is so tenacious that, when treating five hundred patients at the same time, he remembers exactly what has been prescribed for each. The religious punctuality with which his least injunctions are obeyed, is truly surprising.

The triumph of Priessnitz is not confined to Grœfenberg. A great number of establishments and of magnificent institutions, devoted to the practice of hydropathy, literally abound over the face of Germany. Its influence has even penetrated into the customs of the public. Among the establishments in question, there are three in the kingdom of Wurtemberg, of which the grandest, established by a company of share-holders, is situated near the little town of Esslingen, in a charming and very healthy country. Hydropathy has met with still more favour in Bavaria. In the year 1837, the King sent Drs. Hœrner and Schnizlein to Grœfenberg. Since then, important establishments have been founded in that kingdom devoted to hydropathy, and amongst others that of Alexandersbad, under the direction of Dr. Fikenscher; moreover, almost all the distinguished physicians of Munich, especially Professor Ringsess, attribute considerable therapeutic powers to this mode of treatment.

Lastly, remarkable modifications have been introduced in Bavaria into the customs of society, in accordance with the principles of this new practice. In fact, the court and a part of the courtiers have renounced the use of wine and of exciting drinks, and wash themselves all over every morning in cold water. The Queen and her children follow up these cold ablutions. Nine leagues from Munich, in the little town of Freysing, there has existed, since 1839, a small military hospital, under the direction of Dr. Gleich, in which this physician treats his patients exclusively upon hydropathic principles. In Austria, the use of ablutions in cold water is also adopted by the people in general as well as by the Imperial Court. There are six hydropathic establishments in the neighbourhood of the capital of Austria. Similar institutions may also be met with in Hungary, Moravia, Illyricum, and Corinthia. Dresden is not behind-hand in acknowledging the principles of hydropathy. For several years, the inhabitants have adopted the custom of washing the entire body in cold water, and every morning a number of sick people may be seen resorting to the Royal Gardens, a quarter of a league from the city, to drink the water as it issues from a small fountain. Three years since, a society of hydropathists was formed in this city (Paris), with the view of advocating the employment of water as a medical and hygienic agent. Berlin, Zittau, and Cassel, contain associations of the same nature. The Prince of Saxe-Gotha, has given up his chateau at Elgersburg for the purpose of founding an hydropathic establishment. The Prince of Saxe-Meiningen has devoted his

chateau of Liebenstein to the same purpose, and the Sovereign Prince of Russia has also created a similar establishment. Leipzig and Berlin in like manner contain hydropathic institutions; and there are three upon the boders of the Rhine, of which we must particurlarly mention that of Marienberg, near Boppart, three leagues from Coblentz. The establishment of Marienberg, directed by Dr. Schmitz, rivals that of Grœfenberg.

These statistic documents, founded for the most part on the Report upon Hydropathy, lately addressed to the Minister of War, by Dr. Scoutteten, shew the degree of confidence which the new practice has inspired. With so many facts before us, besides others of the same kind, which it would be too tedious to enumerate, it appears impossible to look upon hydropathy as an entirely dangerous, or as an inoffensive practice, or to regard the peasant of Silesia either as an ignorant man or as a juggler. In a future article, we shall expose the principles as well as the mode of practice adopted in this new system.—(*Gaz. Med. de Paris.*)

[These reports, which are more favourable in their tendencies than in their bare assertions, prove, that whatever real good hydropathy may do mankind, it will for some years—at least, till the present *furor* in its favour subside—do them more mischief. People may be poisoned by too much spring water as by too much of anything else.—Ed.]

(From the "American Journal of Medical Sciences, for April, 1843)

Fatal Singultus following the bite of a Rabid Dog. By W. L. Wharton, M.D., Surgeon U. S. Army.

The lands in the immediate vicinity of Fort Gibson, Ark. are occupied by various tribes of Indians, who have been removed west by the Government within the last few years. During this period that section of country has been noted for the annual visitation, in the autumnal months, of rabid animals. This liability may be inferred from the number of dogs, arising from the Indian's partiality for them, and scarce a fall passes without the propagation of that terrible venom "Rabies Canina," amongst the wild stock, as also the small "prairie wolf."

It was during my period of service at the above named military station, that the following melancholy incident occurred.

On the night of the 9th of October, 1840, as two of his comrades were conducting a soldier of the 4th regiment of infantry, then under the cold stage of fever, to the hospital, and when in its immediate vicinity, they were attacked, with great ferocity, by a rabid dog, which inflicted a wound on the poor fellow, to the extent of removing the nail, and entire true skin from the first phalanx of the right thumb.

A few moments subsequently, as Capt. ——, the officer of the day, was passing the usual rounds of the night, in the neighbourhood of the place where the soldier had been bitten, he was attacked by the same dog (the description answering that of the two soldiers who conducted the invalid), which seizing the right foot, as Capt. —— expressed it, "with a wolfish gnash of the jaws," tore off the entire top of a stout brogan shoe. Instantly retreating into an adjoining set of quarters, this officer there found my "assistant surgeon" engaged in removing by incision, a piece from the leg of Lt. ——, who attracted by the scream of the soldier, above alluded to, had rushed out to his assistance, and was bitten by the same dog, on the upper and outer part of the left leg, in a spot thinly covered by integuments. Two of the teeth only, in this instance, had merely entered the flesh, having previously however passed through several thicknesses of garment, and thus has followed his non—infection. I have been thus particular that the condition of the dog may be inferred.

During the first twenty-four hours after entrance into the hospital, the situation of the soldier was alarming, from a protracted chill, caused in a measure, I have no doubt, by fright. He was on the morning of the fourth day, however, relieved from the return of the paroxysm of fever, and under tonic treatment.

Prevented by his condition in the first instance, from removing the thumb by amputation, as was my desire, I deemed it afterwards useless to do so, but resorted to the removal of partially detached portions, and free cauterization. The condition of the wound up to the 21st, had induced me to continue the treatment subsequently adopted, the application of emollient poultices, every three or four hours. At this date, however, an evident change occurred in the wound, an irritable state, and ichorous discharge, succeeding a healthy pus and appearance, the patient at the same time being seized with *singultus*, which continued until the 10th November without intermission, except during sleep produced by morphine.

The treatment pursued having reference to the wound, and internal remedies, it had not I confess occurred to me throughout the existence of this symptom, to examine the *cervical portion of the spinal column.* I did so, however, on the morning of the 11th, and the extent of irritation may be inferred from the fact that when I pressed thereon with the finger, the patient exclaimed, "for God's sake, don't press there, it is like a boil."

The abstraction of ℥iij of blood by cupping on the part, followed by the immediate application of a blister thereon, resulted in the entire relief of the *singultus.*

The patient died two days afterwards apparently *worn out*, by this protracted symptom, retaining his intellect to the last, and unaffected by fear, but talking rationally about the injury he had received, &c.

The different theories which have arisen as to the proximate cause of "Hydrophobia," furnish a proof of the obscurity which has ever involved this truly *opprobrium* to our profession.

By some writers the cause is located in inflammation of the *medulla spinalis*, whence the effects of the disease is propagated; and does not the occurrence of *singultus* in the present case, sustain that belief?

Fort Leavenworth, Mo., Nov, 23rd 1842.

Case of Premature Birth. By A. B. Shipman, M. D.—Mrs. Edward C. Eldridge, ætat. 24, mother of two children, gave birth to a female child on the 31st of December 1841. I was present at the birth, which was easy and rapid. From the best data which the woman could furnish, that of the cessation of the catamenia and quickening, she supposed herself at the commencement of the sixth month of utero-gestation. The appearance of the child also indicated no further advance, it being barely alive, with little motion, and was too feeble to cry. It had no nails, or hair on its head, and the cranium was not firmly ossified, with the sutures and fontanelles widely open. I did not examine its eyes, therefore can say nothing of their appearance. The child was wrapped in a blanket and laid away, while the woman was being put to bed. On examining the child it was found more lively, and was washed, dressed, and fed; it continued to live, and in about a week from birth had convulsions, which recurred daily for three weeks, when they ceased. At the end of the seventh week it was weighed for the first time, when its weight was found to be *one pound ten ounces*! and which was probably about the true weight when it was born. From that time to the present it has grown gradually, and is now ten months old, weighing ten pounds eight ounces, and is lively playful, and healthy. It has never been able to nurse. I regret not having measured it at the time of its birth, but as I had no hopes of its living at the time, and expecting its death daily for two months, it was neglected. The mother is again in the fifth month of pregnancy, and is healthy and robust. She attributes the premature birth to a fall which she received a few days previous to her confinement.

Case of Remarkable Precocity in a Male. By A. Lopez, M. D.—There is now being exhibited in this city (Mobile) a precocious male child, of whom the following particulars have been carefully obtained by myself, with a view of forwarding them for publication in your journal.

Anderson, the child of a mulatto woman, belonging to Mr. Wm. Bennet, of Mississippi, was born on the dividing line between Loundes and Monroe counties in that state, on the 7th day of April, 1839, making his age at the present date three years, 10 months and 15 days.

The following proportions of this wonderful boy have been accurately taken by myself.

Weight	82 lbs.
Height	4 feet ½ inch.
Width across the shoulders	16½ "
" around the chest	27½ "
" " the belly	27 "
" " the thigh	19 "
" " the calf	12½ "
" " the ankle	7 "
" " the biceps muscle	11 "
" " the arm	9½ "
" " the forearm	10 "
" " the neck	13½ "
" of the hand, dorsal aspect	4½ "
Transverse measurement of head from the top of one ear to the other	12½ "
From between the eyes across the vertex to the occiput	17½ "
Circumference of head	22 "
Depth of face from the lower part of os frontis to the extremity of chin	6½ "
Length of the arm from the tip of the middle finger to the acromial junction	20 "
Length of penis at rest	4 "
Circumference of penis	3½ "

His scrotum bears a fair proportion to his other developments, but the *testes* have not descended. The pubes is covered abundantly with a thick curly hair, the appearance of which was observed when he was one year old. He has whiskers and a growing beard. His axillæ are filled with hair. The mammæ are large and prominent. The hair on his head very thick and curly. His *teeth* are only twenty in number, corresponding with the first set, and are particularly characteristic of infantile dentition, which he completed at the expiration of his first year. His countenance, although precocious, is indicative of the child, so also his intellect. He speaks distinctly, in a deep toned, strong voice. His disposition is playful and cheerful, and ordinarily amiable, but whenever he has been excited to anger, his temper is terrible, and has never been subdued by punishment. This however, rarely occurs. He lifts with perfect ease from the ground a man weighing 140 lbs. and can cut with an axe, a log of wood as large round as his body. His face, neck, shoulders and chest are fully covered with the *acne simplex* of puberty.

Upon inquiring whether he had experienced venereal appetite, or has had seminal discharges, his attendant was unable to answer, but thinks from evidences occasionally noticed on his shirt, that the discharge has occurred. The *alvine discharges* are not oftener than once in three days, frequently being postponed for a week without any inconvenience. He has never been sick from his birth, and enjoys uninterrupted health. He sleeps quietly and soundly at night, but is uncommonly active and wakeful during the day. *Appetite* not remarkable, but good, and digestion perfect. He drinks frequently and abundantly of water if indulged, and urinates very freely and often, in a bold large stream. The *pulse* is full and regular, giving 84 strokes in a minute. The parents of this boy have had two other children not distinguished by anything remarkable.

The birth and circumstances of this extraordinary child are duly attested by the midwife who officiated, and corroborated by the certificates of many respectable professional and private gentlemen of his neighbourhood.

I omitted to state that they report the umbilical cord to have been of unusual dimensions, the exact measurement I have not ascertained.

A. Lopez.

Trial of Charlotte Hamblin, alias Charlotte Ewing, for the murder of Andrew W. Ewing, at Mobile, state of Alabama, in November, 1842.

The deceased was an actor by profession, aged about twenty-five years, and of intemperate habits. On the night of the 25th of March, while playing his part at the Theatre, he and his wife came off together from the stage, and while doing so, she

asked him why he had not been home that day. He replied, that it was none of her business, and at the same time struck her with his fist or hand, and knocked her against the scene. Ewing then left to go down stairs, and his wife followed him. In a very few minutes thereafter, two witnesses depose, that they met her at the foot of the stairs, holding a weapon of some sort in her hand, and exclaiming that she had killed him. Deceased was found lying across the threshold of the dressing-room, speechless, with two wounds in his right arm.

He was proved to have enjoyed good health for several years, and to have played parts which required great physical exertion. It was also stated that he frequently engaged in billiards and ninepins, and never complained of fatigue or difficulty of respiration. For the prosecution, Dr. Kelly deposed, that on being sent for, he found Ewing dead. There were two wounds upon the right arm, by which the basilar artery was cut in two places—these wounds were near the olecranon and superficial, upon the inner and lower side of the arm. There was another wound upon the left side of the body, between the false ribs and the iliac region, obliquely and upward. Dr. Kelly did not attend the dissection, but upon introducing a probe into the wound, he found that the dagger had penetrated at least two or three inches in the direction of the stomach and spleen. He could not say whether the deceased came to his death by the wounds received. He did not observo any arterial blood issuing from the wound.

For the defence, it was proved, that Ewing was quite excited that evening, but not so as to interfere with his business—that after the wound had been inflicted, his wife exclaimed, "why have you struck me," and repeatedly implored forgiveness. It would also seem that the dagger she wore, was appropriate to the part which she was acting.

Dr. Levert examined the body, and at first supposed that the wounds were the cause of his death. The following appearances were observed. The abdomen was full and much distended; two slight wounds on the right forearm, and a slight wound apparently on the left hypochondriac region. There was no hemorrhage from the wound, but upon moving its lips with the finger and thumb, a small quantity of dark coloured blood was seen to issue from it. On opening the abdomen, its whole cavity was found filled with blood, and which had evidently caused the distension noticed above. Dr. Levert's first impression was, that some important blood-vessel had been opened by the knife with which he had been stabbed, but upon tracing the wound with great care, he soon ascertained that no vessel of any size had been touched. The knife had entered the left hypochondriac region, just under the margin of the false ribs, its direction was a little upwards and inwards, it passed through the mesocolon, near to the gut, but without wounding it, and into the cavity of the stomach near its large extremity. It entered the opposite side, and the wound was small, being made merely by the point of the instrment.

Dr. Levert remarks, that as there was no blood-vessel of sufficient importance injured in the track of the wound to account for the sudden death or for the immense quantity of blood found in the abdominal cavity, he came to the conclusion that some cause, other than the wound with the knife, must have produced the fatal result in so short a time. After sponging the blood from the abdomen, he discovered a large aneurismal tumour, which occupied and almost entirely filled the right iliac fossa. This aneurism had been ruptured at a point below and to the right of the duodenum. It was thus one of the descending aorta, and from the large quantity of fibrinous matter which it contained, and the very attenuated condition of its parietes, of long standing. The witness hence came to the conclusion, that as the knife had passed near the aneurism, its rupture must have been caused by his high state of mental excitement, increased by the spirits which he had taken, and on the trial his testimony was to the above effect.

The jury, after an absence of about ten minutes, returned a verdict of not guilty.

I am indebted for the above facts, to a newspaper account of the trial, and also to a communication from Dr. Levert to Professor Horner, both of which have been kindly forwarded to me by Dr. Hays.

The resemblance between this and some others noticed under the head of Medical Jurisprudence in the summary of the present number, is worthy of consideration.

T. R. B.

Rupture of the Spleen,—Dr. A. G Welch, of Annapolis, Md., has communicated to us a case of rupture of the spleen in a boy 17 years of age, caused by a kick by a man on the abdomen. Death ensued an hour after the injury. On post-mortem examination, as in similar cases, the abdomen was filled with blood. The spleen, which was torn in three different places, was "nearly double the natural size," and "so very soft that when taken out and held up, it would scarcely hold together."

Cataract operated on at a very advanced age.—Dr. Wm. M. Boling, of Montgomery, Alabama, has sent us the details of a case of cataract in a negro man, said to be 110 years old, in which he successfully operated by couching. One eye only was operated on; very little inflammation followed, and in a short time his vision became "better than that generally enjoyed by persons of his age."

Singular case of congenital deformity, by Samuel Lilly, M. D. of Lambertville, N. J. [Communicated by Prof. Hodge.]

On the morning of 16th Nov. last, I delivered Mrs. D ——— H ——— of a son, after an easy labour of a few hours duration. The child after the delivery did not cry out, and a considerable length of time elapsed before respiration was established; it was then accompanied by a convulsive rattling noise. No particular examination was made at this time except that the lower jaw was discovered to be much shorter than the upper, presenting the appearence of an entire want of chin. On my visit the ensuing day, I found that the child had not yet cried, and that the rattling respiration continued. The nurse informed me that she could not pass a spoon into the child's mouth, and that but few drops of fluid had passed into it. On close examination I discovered that the mouth could not be opened, and that a fleshy adhesion existed between the front part of the alveolar process of the lower jaw and the roof of the mouth; it was about one-fourth of an inch wide, and three-eighths of an inch long, the long diameter extending into the mouth; a hooked probe could be passed entirely around it, insorting it at one corner of the mouth it would emerge at the other. Under these circumstances, after consultation with my uncle, Dr. John Lilly, we concluded that the only possible chance for the child to live was to divide the adhesions—true, the hemorrhage necessarily following it might prove immediately fatal, but that the child must surely die in a short time from want of nourishment. These views were fully and candidly stated to the parents, who consented to the operation. Passing a probe-pointed curved bistoury behind the adhesion, I divided it without difficulty.

The child immediately and for the first time cried out. The blood soon filled the mouth, and was suffered to run out, the child being held in a position favourable. The hemorrhage could not be restrained; limbs cold; and styptics were in vain used. The cautery was not (owing to the refusal of the parents) tried. The hemorrhage gradually abated; the rattling noise which had attended the respiration ceased, and a hope was entertained that the child might survive; but the hope was vain; it expired in about four hours after the operation.

Urgent professional engagements, much to my regret, prevented my making a post-mortem examination.

FRENCH ACADEMY OF SCIENCE.

(Sitting of the 8th of May.)

M. Arago announced to the Academy the discovery by M. Victor Mauvais of a telescopic comet, seen by him on the 2d of May. Three observations, regularly taken since that period. have enabled M. Mauvais to calculate, by a first approximation, the elements of the new comet, which seems to correspond with no appearance hitherto recognized.

A second discovery has been made this week, from the observatory of Paris, relative to an old appearance of Halley's comet, corresponding to the year 1378. M. Edouard Biot, in making an abstract from the Chinese annals, found the observations from which M. Saugier had profited in coming to the same result. Departing from the return observed in 1834, the seventh passage of this comet has been marked in tracing its course through the lapse of centuries. This retrospective discovery, made through the mist of history, is as interesting for astronomy as that which was effected when the clouds of the horizon were pierced with the aid of the telescope.

The Academy, through M. Reynault, has reported favourably of the paper upon "*Latent Caloric evolved in the Fusion of Ice*," recently presented by MM. Laprovostaye and Desains. This paper corrects the number given by Lavosier and Laplace, namely, by substituting the number 79 for that of 75, adopted hitherto by chemists. MM. Laprovostaye and Desains have operated entirely by "the mixing method." The followiug details shew the nature of the experiments:—

A small brass vase was filled with a certain quantity of water, the temperaturo of which was 10 degrees above that of the surrounding atmosphere. The vessel, water, and a thermometer, were weighed, and then placed on an isolated wood support, on which it was supported by three points. One of the experimentalists stirred the liquid and observed the temperature; the other exhibited with blotting-paper a small piece of ice, sharpened at the end, which he put into the water in the vase. Another watched the state of the thermometer, keeping the water continually agitated, and marking the time by the second hand of a watch.

The final temperature varied slightly from that of the surrounding bodies, being generally lower by one or two degrees. This temperature required to be corrected by the loss and gain of heat, that the vase underwent, in consequence of the difference of temperature in relation to the surrounding air. The elements of this correction were furnished from the observation of descending temperatures made in each experiment during the fusion of the ice, and from some experiments on the rapidity of the cooling of the air by a given excess of temperature.

The weight of the ice was obtained after the experiment by replacing the vase in the balance scale, the increase of weight, by comparing it with the first weight, gave necessarily the weight of the melted ice. This weight underwent a slight correction, arising from the fact of the water in the vase experiencing during the experiment a loss by evaporation, which, through preliminary arrangements, they were enabled to keep an account of. Finally, the ice at the moment it was placed in the water was always moist on the surface. The authors endeavoured to measure the exact quantity of the moisture by experimenting with pieces of ice, similar in all respects, and under the same circumstances, with a small sheet of blotting paper, the increased weight determining the quantity of water from the ice imbibed by the paper.

The quantity of ice employed in these experiments varied from 14 to 80 *grammes*; the weight of water employed in the fusion was in two extreme cases 155 and 700 *grammes*. The authors have adopted the mean of seventeen experiments.

The Committee praise the authors of the paper for the manner in which they have experimented. As to the result it is now, by another happy circumstance, placed beyond doubt, and from an authentic fact in science. M. Regnault has been occupied during two years with the same enquiry, which has ended in precisely the same result as that of M. M. Laprovostaye and Desains.

The following is one of this gentleman's experiments made with snow.

A small basket of metallic wire was filled with snow, and then buried completely in external snow. The well of a thermometer, of which the zero had been verified some instants before, was now plunged into the snow contained in the basket and left nearly an hour. The temperature of the

surrounding atmosphere was observed, as well as that marked by the thermometer, which at this time was a little below zero. At a little distance was placed a small brass vase, with a certain quantity of water, of a suitable temperature, in which was placed a thermometer. After quickly ascertaining the weight of the water, the apparatus was placed before a horizontal telescope, by means of which the temperature, marked by the small thermometer, was read, after the water had first of all been agitated. At the same moment the temperature was marked, an assistant raised the basket filled with snow, by means of small silk cords, and then plunged it in the water of the vase. The basket was continually agitated in the liquid, the snow melting rapidly within a minute and a quarter, the experimentalist, at the same time, observing the thermometer with the telescope, and marking the minimum temperature.

The apparatus was then immediately placed in the scales. The increase of weight, with relation to that of its first weight, indicated the weight of the basket, plus the contained snow, and so gave the weight of the melted ice.

This experiment furnishes all the required elements for calculating the latent heat of the fusion of ice. It is only necessary to correct the minimum temperature taken by the fraction of a degree lost during the experiment from the cooling of the vase, its temperature being above that of the laboratory.

A report was read by M. Dufresnoy, on a paper by M. Adrian Paillette, entitled "*Researches on the Geological Composition of Lands in Sicily and Calabria, which contain Sulphur and Amber.*"

Sulphur, which forms the base of several manufactures, and of which the use is so varied, presents numerous beds, but, in general, non-productive. Sicily offers a happy exception to this law of nature. Sulphur exists in it in prodigious abundance, and its mines are a source of inexhaustible wealth. This singular feature has for a long time attracted the attention of geologists. Dolomieu had studied the most part of the mining operations of Sicily, in 1781. Since that time, the great naturalists, Ferrara Melograni, MM. Hoffmann, Lyell, and Constant Prevost, had, with equal zeal, sought to discover the phenomena of sulphur in the lands of Sicily.

The descriptions of these natural philosophers, notwithstanding their interest, contain contradictions which leave some doubt on the true bed of this mineral. M. Paillette has attempted to fill up this gap. He gives in detail the different sulphur districts of Sicily, as also the customary methods of working in use. The committee do not venture to affirm that the author has completely unveiled the mystery which surrounds the beds of sulphur in Sicily, and above all, the mode of its formation. But the paper, full of facts carefully verified, gives us a notion much more clear of the age of sulphur earth, and of the place of this substance in the middle of gypsum and chalk, with which it is always conjoined.

The result of these enquiries goes to show that sulphur exists in black loam, is bituminous, and seated above the compact beds of chalk belonging to the cretaceous formations of the south. This opinion is, finally, conformable to that of the predecessors of M. Paillette.

An interesting discussion followed the reading of this report, in which some of the most distinguished members of the Academy took part.

Complaints have been recently made of the mineral waters of Vichy, sold at certain depots in Paris. M. Beaude has analysed some contained in small stone bottles, against which strong presumptions had been raised. Iron and organic matter only had been found, from whence M. Beaude concluded that the water was not acted upon by stone, and that these sort of bottles preserved the water quite as well as glass bottles, and that, consequently, they were quite as exempt from danger.

M. Beaude could not be ignorant of the fact, that on the 11th of last April MM. Baruel published the result of their researches on stone bottles filled with the mineral water of Vichy—that, contrary to his opinion, they found the internal surface of these bottles covered with lead—that salts were necessarily formed that mixed with the water which became injurious to those who were the consumers.

The therapeutic, medical, surgical, and toxicological annals of M. Rognetta, which appeared this month, contain also the following information on this subject.

They shew that several sorts of mineral waters, sold in stone bottles, are altered, 1st, by the action of mineral principles in the liquid on the mineral principles of the surface of the bottle; 2nd, by the absorption of the produce of this action in the substance; 3rd, by mechanical infiltration of the same liquid through the pores of the stone. The author recommends that the water should be brought from the wells in glass bottles of the FIRST QUALITY, for even certain kinds of glass, like stone, are insensibly penetrated by certain liquids.

It will be seen that these conclusions seem much more rational than those of M. Beaude.

The surgeons who have laboured to destroy the congenital occlusions placed at the orifice of mucous cavities, know how difficult it is to obtain a complete, and above all, a durable cure. M. Jobert proposes the following operations. In the first instance, separation of the re-united parts, either with the scissors or the bistoury. From the result of this operation is obtained two transverse wounds, placed one above the other, united together in a single point by means of a sharp angle, of which the edges are limited, within by the mucous membrane, without by the skin. The second operation consists in raising over the external edge of the lips of these two wounds, a portion more or less extended, and more or less deep, of the tissues which form there, so as to enlarge, at the expense of the skin, the bleeding surfaces produced by the operation. This time the operation is performed with scissors or the bistoury. But in the same manner as if refreshing the lips of an ancient solution of continuity. In the third operation the edges of the wound are turned outside, with the assistance of a suture needle a hem is made opposing between the edges of the wound the two bleeding surfaces which the mucous-membrane when doubled on itself forms. In this manner the passage remains open, and there is less to fear from the closure, since the lips of the incision, by the very fact even of the antoplastic process, are thickened and maintained wide apart the one from the other.

It is particularly on the occasion of the vaginal canal, that the author has been led to imagine this process. We ought not to omit that M. Capellette, of Trieste, has just published two cases of a similar nature, cured by the aid of cauterising the cyst or of the morbid cavity. Success for success, we do not believe that these two procedures are better than that of M. Dupuytren, the simplicity of which gives it a decided advantage over all others. There may, perhaps, be cases in which the latter method cannot be adopted, and in that event the process of M. Jobert may supply its place. In that case it would be, indeed, a triumph for modern surgery. But once again the button-hole and button, with the two heads, of Dupuytren, seems to us suited to so many cases, that while the division and hem of M. Jobert would not be without an exception, it can hardly be said to be more complete.

CALCULUS VESICÆ.—M Perotti narrates the case of a female, 30 years of age, who consulted him, after having suffered for three years from symptoms of stone in the bladder. On examination he found a large immoveable calculus near the neck of the bladder, to which it was adherent, and partially enveloped by a membrane. Having dilated the urethra, he passed in a pair of forceps, crushed the stone, and destroyed the adhesions. After repeated sittings, the entire stone came away in fragments, and was followed by its enveloping membrane. Incontinence of urine was experienced for two months, but ultimately disappeared.

TO CORRESPONDENTS.

"An Enemy to Hole and Corner Surgeons" *cannot surely expect us to publish his letter against Mr. Tyrrel at such a moment as this. The hints for a pencilling of that eminent surgeon, (the epithet will not be thought undeserved by those who knew him as an oculist) come too late. Probe's sketch appeared some time since.*

F. W. H.—*The arrangement suggested would double expences; many would suggest the change—few would bear its brunt.*

P. P. *wants to know whether "competitors more numerous than the cities which claimed the honour of giving birth to Homer" in the "Medical Times" of last week, be a phrase borrowed from "rivals more numerous than the cities which contended with Athens for the honour of giving birth to Homer" in Jobson's outline of the Anatomy of the Teeth? We cannot say.*

Peter Picktooth *must excuse us with his egg-spoons made of best cow rib; the subject, for a personal one, has been enough spoken on. The topic could only be decently dwelt on when viewed in its connection with the interests of science. Besides, our correspondent forgets, what no correspondent should forget, to oblige us with his name.*

Mr. Siddely.—*The order is sufficient.*

We are afraid we cannot avail ourselves of Mr. Wilson's invitation to hear him prove that we belong to the "Israelitish" race. If the numerous texts referred to, prove that "the English are lineally descended from ancient Israel" an interesting physiological question arises, "how we have contrived to lose our thick protruding lips, and curved noses and chins?" The secret would be of some use to our brethren of the promise near the Minories.

Mr. Andrew Freke's *letter, with others, under consideration.*

P. M. P.—*We do not give advice gratis; nor is our office a consulting shop.*

Ruben Julep *tells us, in a tolerably long letter, that warm water applied to the neck of a decanter, will loosen a tight stopper. This is, or ought to be, generally known.*

Jasper Buddle *writes:—*

Sir,—For the last two months I have been in the constant habit of visiting the library of the College of Surgeons, and very much wish you would direct the attention of the "greatest reformer of the age" to the intolerable nuisance members are subject to, in their way to the reading room from the hall door, in being compelled to run the gauntlet through clouds of dust, caused in sweeping the staircase, &c. Surely, Sir, this could be done before 11 o'clock in the morning. I would not have troubled your scientific pages with this communication if I could have drawn Mr. Wakley's attention to this nuisance, but I presume the worthy coroner is now past taking any interest in abuses affecting the comfort of the profession, as I have sent him this complaint a fortnight since, and he has not granted the common courtesy of acknowledging the receipt in the "Answers to Correspondents."

A Pupil *is in his own person, taking him to speak the truth, a good illustration of the truth of the opinion that Phrenology may be studied too much. What can more interfere with a young man's improvement, or comfort, or utility, or amiability, than the habit of considering all he sees in reference to his own cerebral development? We have in this an egotism which, disgusting to others, mars in the individual all attempts to manly and consistent advance in any other studies.* Ne quid nimis *is as good a maxim in Phrenology as in other things.*

R. M. W.—*We shall give several formulæ for depilatories in our next.*

J. H.—*We cannot pronounce what "is the best and most economical tonic, which does not excite the secretion of the seminal fluid, or at least in a very small degree, and which may not cause desires hurtful both in a moral and physical point of view?"*

Mr. Samuel Cartwright *has written us a letter denying that he wrote the note published by us in our last number. The letter which arrived but the moment before going to press will appear next week*

THE MEDICAL TIMES.

SATURDAY, JUNE 3, 1843.

The most deceptive of all figures—figures of arithmetic.
CANNING.

STATISTICAL medicine, like most other novelties, has been at once overpraised and undervalued. Its introducers, consisting of one old bird, with several hundreds of young enthusiasts, have given it claims to qualities which it is not in the nature of any study connected with so ambiguous, so complicated, and shifting a subject as disease, to possess; while its enemics—usually very old practitioners—can see in its long tables no facts which had not been just as well expressed by the words, "rare" and "very rare," "frequent" and "very frequent" of the old school, nor any directions to guide practice which had not previously been inculcated by men like Sydenham or Boerhave, who were satisfied in expressing truths in plain simple English, instead of Arabic numerals. Having passed, however, its "martyr age," and survived the opposition of foes, and that still greater opposition, the advocacy of friends—we may now fairly, we suppose, join with that sagacious but not overzealous part of the medical community, who, if questioned for their opinion, when the matter was first debated, confessed that "there was something in it."

The exertions of medical men generally, in this new field of exertion, cannot, we may say in warning, be of any very essential service in reference to their own private practice. In the limited number of cases coming under their own observation, there is nothing to justify any wide conclusion. The question of probabilities is one only to be examined with the data given by large numbers. In a limited run of events, singularities are quite as likely to shew themselves as matters of the average character, and statistics on a small scale, is but another word for chance. It will only be when the experience of hundreds have been added to the experience of other hundreds—when thousands of facts are added to thousands of facts—when the peculiarities and coincidences here have been reduced to their average proportions, by opposite peculiarities and coincidences there that a safe deduction may be drawn. If a medical man want to go wrong on scientific principles, he has no more compendious way than to arrange his limited cases arithmetically, and derive from them, conclusions as to the diagnosis or treatment of the next disease he will combat.

While we venture, however, to express a doubt that "Statistics" involve any very great utility, *immediately*, in the actual practice of medical men, we cannot too forcibly impress on them that, under certain conditions, they might lead to generalizations at the hands of the highest minds devoted to our science, which would materially increase the power and utilities of our profession. One vast benefit it would doubtless confer, would be in its relation to medical police. It would not probably discover new sources of mischief, but it would give increased definiteness to the old. We are apt to think a vague evil a doubtful one—and we never chance uncertainties with less reluctance than in regard to health. The array of figures—when implicit reliance can be secured for them—is here just what we want. It brings the grand results before us with appalling distinctness; and shews, with demonstrative light, that what appeared to be nobody's business, is in truth everybody's business.

But whatever the utility may be of Statistic Medicine, the *acquisition* of that use must depend on two conditions, to which we have already generally adverted—its rigid accuracy as to its figures, its correct explicitness as to all the circumstances under which the figures are collected. We must not only have impartial and vigilant registrars, but registrars who know and recognize in their reports the influence of peculiar soils, peculiar temperatures, &c. Hitherto too much inattention has been shewn in regard to both. The statistical part of every medical investigation is always the most unsatisfactory. In the contests between the lithotomists and lithotritists, who will forget the confident appeal both parties make to the records of numbers, and the exchanged denials between them as to their veracity. With regard to the circumstances attendant on the figures, we believe that improvement is now generally manifesting itself, and we may point out, as one satisfactory instance, the paper, by Dr. Guy, of King's College, "*On the Influence of Season and Weather on Sickness and Mortality*," published in the Journal of the Statistical Society, a paper which has, indeed, won from us the observations we have thus thrown out.

In this interesting article, Dr. Guy attempts to shew that the prevalence of disease is governed with more or less uniformity by the different seasons and temperature. The proposition is certainly not an *unexpected* one: the value, however, of Dr. Guy's researches is, that they shew the *character* or extent of the relation. We shall not follow him through his numerous tables, but shall at once give what the tables, in part at least, prove:—

The results to which the foregoing facts and reasonings lead may be briefly stated as follows:—

1. The amount of sickness in central districts of London during the year 1842 varied directly as the temperature, being a maximum in August, the hottest month of the year, and a minimum in Jan., the coldest month.

2. The diseases which determined the order of sickness were febrile and catarrhal affections, the contagious exanthemata, and the disorders of the digestive organs; to which may be added the mixed group, consisting of gout scrofula, &c.

3. The diseases of the organs of respiration followed the inverse order of those already mentioned and were inversely as the temperature, being most numerous in the colder, and fewest in the hotter months.

4. The temperature did not appear to exercise a marked influence on the other classes of disease.*

5. The hygrometric state of air appeared to have little effect on disease, and if produced any effect, it was on the diseases of the organs of respiration, which were in excess during the months in which the quantity of moisture in the air was the greatest; but these also were the coldest months.

6. The mortality for the metropolis during the year 1842. was greatest in the first quarter, and least in the second, and was inversely as the sickness, except that the mortality of the third quarter exceeded that of the fourth.

7. The diseases which chiefly influenced the order of the quarters in respect of mortality, were those of the chest, to which may be added as following the same order, the decay of nature in the aged.†

8. The order of the seasons in respect of sickness and mortality differs year by year, and does not admit of being reduced to any precise rule.

9. As a general rule, but one admitting of many exceptions, it may be stated, that the amount of sickness tends to vary directly, and the amount of mortality inversely as the temperature.

These results must be received with some reserve, as they are founded on a comparatively small number of facts; but they are probably not very far from the truth. At any rate they may prove suggestive of future enquiries, founded upon a broader basis. At present the materials for a comprehensive theory of the influence of the seasons and weather upon sickness and mortality are wanting, and are not likely to be supplied till the example set by one or two public hospitals and dispensaries shall have provoked imitation. In the mean time the present attempt, if it accomplish no other purpose, may serve as an example of the mode by which such enquiries must be conducted.

In the course of this enquiry it is scarcely possible, that some hypothesis should not have suggested itself as the most likely to prove true; and it may not be amiss to bring this attempt to a conclusion, by stating in few words that which I have led to form.

The causes of sickness are twofold, consisting of atmospheric changes which may be submitted to measurement, and of certain more subtle changes in the composition of the air, which at present can neither be analysed nor estimated. To the former class belong the temperature, moisture, and pressure of the air; to the latter those emanations from the earth or from human beings themselves, which give rise to the majority of epidemic, endemic, and contagious diseases. As the number of cases of sickness produced by these latter causes is generally considerable, the influence of the pressure, temperature, and hygrometric state of the air will not be observed in those years in which these causes are in operation; but in the absence of epidemics, the temperature will be found to be the most influential cause of sickness. When the temperature of the summer is high, there will be such an amount of sickness in the summer months as to cause a large return of sickness for the entire year; so, on the other hand, a severe winter will swell the total sickness of the year, by producing a great excess of affections of the organs of respiration. A summer or winter of unusual length, beginning early and ending late, will also cause an increase of sickness on the entire year, but the nature of the sickness will be different as the temperature is higher or lower than usual. The order of the seasons in respect of sickness will also be mainly determined by the degree in which the temperature of these seasons exceeds, or falls short of, the average temperature.

The mortality, in like manner, in non epidemic years will be chiefly dependent upon the tem-

* With the exception, perhaps, of those which form a measure of the activity of the sexual passion, which were in excess during the hottest months of the year; a fact which corresponds with, and corroborates our experience of the influence of the seasons on crimes against the person, &c.

† It is well known that the most common cause of death in the aged, is an affection of the lungs, called "bronchitis senilis."

perature, varying in the several seasons inversely as the temperature, except in those years in which the summer is unusually warm, when the mortality of the summer may even exceed that of the winter seasons. In other instances, the mortality of the summer months will rank next to that of the winter or autumn.

It is only necessary to observe, in conclusion, that as this attempt combines two of the most variable things in nature, the weather and the condition of the human body, is is scarcely to be expected that any more definite results than those now obtained should have been wrought out. As much has been done with the scanty materials at my command, as I expected to accomplish, and it formed no part of my plan to quote the results at which other enquirers had arrived. Suffice it to state that between this attempt and the labours of others there is that general correspondence which will render each confirmatory of the other.

PHARMACEUTICAL VARIETIES.

The Pharmacopœia of the Royal College of Physicians of Edinburgh, and Dr. Christison's Dispensatory.

(We have under this heading a biting communication from Mr. R. Phillips, from which we shall give a few of the more interesting passages.)

In the preface to the last edition, the College observe, that "few additions have been called for," and, consistently with this statement, I find that canna, only, has been added to the materia medica; and to the preparations, acidum aceticum aromaticum, infusum senegæ, iodinei liquor compositus, and ferri iodidi syrupus; on the other hand, there have been omitted decoctum senegæ, ferri iodidi solutio, and tinctura veratri.

"We have," say the College, "rectified several errors, which have occurred to ourselves, or have been pointed out by various critics;" and, on examination, I actually find that in the Materia Medica alone, about seventy-five alterations have been made, besides about one-third of this number of corrections of the wrong use or neglect of capital letters, which were pointed out by me.

It is further observed by the College, "we have made some extensive changes, particularly in the formulas for pills and tinctures," and, it is added, that "in general little alteration is made in their composition, and scarcely any in their strength."

I was curious to discover how "extensive changes" could be effected in the mode of preparing medicines without considerably altering their composition or strength. On examination, I find the case to be, with respect to pills, that whereas, in the first edition, of the twenty-three formulas for pills, the ingredients of twenty were apportioned by weight, they are now to be taken by parts; with regard to the tinctures, of the fifty-six contained in the work, the ingredients of fifty-four are now apportioned to two pints of the solvent, eighteen only being so before, and two tinctures remain unchanged. These alteration afford ample evidence of the difference between extent and importance.

Acidum Aceticum.—In the first edition of the Edinburgh Pharmacopœia, the following formula was introduced:—

"Acidum Aceticum.—Take of acetate of lead any convenient quantity; heat it gradually in a porcelain basin by means of a bath of oil or fusible metal, (8 tin, 4 lead, 3 bismuth) to 320° F.; and stir till the fused matter concretes again: pulverise this when cold, and heat the powder again to 320°, with frequent stirring, till the particles cease to accrete. Add six ounces of the powder to nine fluidrachms and a half of pure sulphuric acid contained in a glass mattrass: attach a proper tube and refrigeratory; and distil from a fusible-metal-bath with a heat of 320° to complete dryness. Agitate the distilled liquid with a grain or two of red oxide of lead to remove a little sulphurous acid, allow the vessel to rest a few minutes, pour off the clear liquor, and re-distil it. The density should be not above 1065."

In the *Medical Gazette*, I made several remarks on the more glaring imperfections of this process, and offered what I believed to be the only possible excuse for its introduction, namely, that it had never been tried. It now appears that this apology is no longer admissible, for from what Dr. Christison states, the process appears actually to have been attempted and my wonder is therefore doubled that it should be retained.

After trying to perform the process described, but with very imperfect success, I stated numerous objections to it:—*First*, Acetate of lead may be rendered anhydrous by exposure to a heat of 212°, with occasional stirring, instead of requiring, as directed, continual stirring, a temperature of 320°, obtained by the inconvenient and expensive method of a fusible metal-bath, or the disagreeable and dangerous one of an oil-bath. *Secondly*, The employment of a thermometer required when either a metal or oil-bath is used, is extremely troublesome, and it is very difficult, even with constant watching, to keep the fusible metal at the temperature directed, for it is very apt to rise above it; and, at a very few degrees below it, the mixed metals become solid. *Thirdly*, On account of the tenacity of the mixture of the sulphuric acid and acetate of lead, there is great difficulty in effecting a perfect admixture of them. *Fourthly*, The residual sulphate of lead, on account of its insolubility, is with difficulty removed from the matrass. *Fifthly*, Acetate of lead is more costly than acetate of soda, in the proportion of fourteen to ten. *Sixthly*, The last-mentioned salt leaves a residue of sulphate of soda, easily washed out of the matrass. *Seventhly*, In expelling the water from the acetate of lead, the College give the operator the choice of two bad methods of effecting it, while in distilling the acid, they restrict him to the use of the worse. *Eighthly*, I showed that "a grain or two" of red oxide of lead could remove only 55-100ths of a grain of sulphurous acid, or from about 1-4000th to 1-2000th of the weight of the product of acetic acid. *Ninthly*, In page 2 of the Pharmacopœia, it is stated, that the density of the acid is "not above 1068.5," while at 44 it is directed that the density should "be not above 1065."

In the second edition this process is retained, accompanied with all its principal bad qualities; some of the details are however corrected to a certain extent, not indeed, as in other instances, in accordance with the remarks which I offered, but in avoidance of the more tangible errors of the original; for example, for "a grain or two of red oxide of lead," we find now "a few grains;" and at page 2, the acetic acid is directed to have "a density not above 1068.5," as on the former occasion; whereas at page 48, it is stated that "the density is commonly from 1063 to 1065, but must not exceed 1068.5."

Dr. Christison (p. 7) after stating the composition, and giving the symbols of acetic acid, observes, that the "hydrated acid (A + Aq.) contains of course an additional equivalent of hydrogen and oxygen. The density of this when accurately prepared is 1063; but it often reaches 1065, owing to the presence of a little additional water. When of the former density one hundred minims (94 grains) neutralize nearly 242 grains of crystallized carbonate of soda." It follows therefore, that 100 grains of this acid neutralize 249 grains of carbonate of soda=eighty-nine grains of real acid, adopting the same equivalents for acetic acid and the carbonate as Dr. Christison does. This acid consequently consists of 11 water and 89 real acid, which are nearly in the proportion of 9, one equivalent of water to 73 of real acid, instead of 9 to 51.48 the strongest known, and mentioned by Dr. Christison as such; the error consequently amounts to above twenty—one parts of real acid.

Nor is this all: in the above quotation we are informed, that acetic acid, when accurately prepared, has a density of 1063; "but it often reaches 1065;" now nothing is here said of acid of sp. gr. 1068.5, which, according to the Pharmacopœia, the product may not improperly possess. Let us, then, compare the strengths of the acids of the various densities which the College must suppose to be nearly similar, with the statement of that of 1063, according to Dr. Christison, and of the stronger of 1068.5, according to the table which he has quoted; the first, I have just shown, must contain eighty-nine per cent., while, for the second, the table gives eighty-two. This difference, amounting to seven per cent., surely cannot be owing, as described by Dr. Christison, "to the presence of a *little* additional water.

This mis-statement of the saturating power of acid of 1063, is repeated so distinctly, that there is no occasion merely to infer it. Dr. Christison says, "between 1063 and 1077.7 the same density may indicate an acid of two very different degrees of strength, the weaker of which is in fact, at 1063, less than half as strong as the stronger; while that of 1077.7 is intermediate,—the neutralizing power of 100 grains of these three acids being 118, 186, and 250, as determined by the carbonate of soda." Adopting, as before, the same equivalent numbers as Dr. Christison, the acid saturating 250 must contain 89.73 per cent. of real acid, and consequently consist of one equivalent of acid, and about two-thirds of an equivalent of water—a compound which I need hardly say, has never been formed.

Dr. Christison characterizes the tests of the London College for ascertaining the purity of acetic acid, as "unnecessarily minute." He does not seem to be aware that nitric and hydrochloric acid are occasionally used to adulterate this acid, but I have found both of them. Indeed, he says, that nitric acid "does not occur as an adulteration."

There are many observations of Dr. Christison respecting acetic acid, which require correction; for example, he states, with respect to what he, in defiance of all modern and just chemical views, calls pyroligneous acid, that "it varies much in density, and therefore in strength," it ought of course to follow, that agreement in density should indicate similarity in strength; but it will appear from the table which Dr. Christison has inserted, that acid of 1068 may contain either 97 or 37 per cent. of hydrated acetic acid.

Dr. Christison observes (p. 5), that "the London College does not admit the pure acetic acid; while, with a disregard of correct nomenclature, which suits ill with its professions of accuracy in this respect, the name has been given to a weak acid about the density of 1050, containing not much above a third of its weight of the pure acid of the Edinburgh Pharmacopœia." Whatever may have been the *professions* of accuracy of the London College it appears to me that they have at least endeavoured, as fully as the subject would admit of, to employ a consistent nomenclature;

at any rate they have not adopted the avowed "patchwork" of the Edinburgh College.

Some critics are extremely difficult to please: because acetic acid contains more water than is absolutely requisite, we may infer that, according to Dr. Christison, it should have been called *impure* acetic acid; on the other hand, when potash containing only the proper quantity of water is called *hydrate* of potash by the London College, then it is "the newest and most refined" name for that substance, although it has been so called for more than a quarter of a century.

"Of acetate of lead," Dr. Christison says, the "chief difficulty lies in depriving the salt entirely of its water of crystallization. Spontaneous evaporation is too tedious a method of attaining this end; and the process is not sufficiently accelerated either in a confined space of air kept dry with sulphuric acid, or even by substituting a vapour-bath heat. But in a vacuum, with sulphuric acid to absorb the moisture, the crystallized acetate parts with the whole of its water in thirty-six hours; and this method is obviously applicable on the large scale."

In the *Medical Gazette* I stated, and I repeat the assertion, that acetate of lead is with great facility rendered anhydrous by exposure to the heat of steam. Dr. Christison, indeed, informs us that acetate of soda "is not so easily reducible as the acetate of lead to the anhydrous state without the escape of acid or charring of the residual salt." Again I repeat, what I before asserted, that this salt may be rendered anhydrous, and without either the loss of acid or charring, by exposure to a temperature of 212°. I venture also to state, that the method by sulphuric acid is obviously *inapplicable* on the large scale; and that what is described as "the more convenient method" of using a bath of oil or fustible metal is as inconvenient as possible.

It is, indeed true, that an equivalent of acetate of soda, as it contains more water than an equivalent of acetate of lead, requires longer exposure to heat to render it anhydrous; I found, for example, that 2740 grains of the soda salt, representing twenty equivalents, become anhydrous by exposure to 212° during seventeen hours, while 3800 grains of the salt of lead, also representing twenty equivalents, required only twelve hours to produce the same effect.

PERISCOPE OF THE WEEK.

Description of some New Organic Bases, obtained by the action of Sulphuretted Hydrogen on the Combinations of Carbonated Hydrogen with Hyponitric Acid.—A peculiar neutral combination, crystallizing in fine yellow needles in its alcoholic solution, called *nitronaphtalase*, is formed by the action of nitric acid upon naphthaline. It is scarcely soluble in water, but very so in alcohol and ether. By treating it with sulphuretted hydrogen, M. Zinin has obtained a new base, which he calls *naphtalidam.* He procures it by adding one part of nitronaphtalase to ten of strong alcohol, saturating the liquid with ammonia, by which the solution of the nitronaphtalase is aided, and then treating it with sulphuretted hydrogen. If the nitronaphtalase is entirely dissolved, and the liquid has a deep dirty yellowish green colour, it is set aside for a day, when a little sulphur is precipitated in acicular crystals; the odour of the sulphuretted hydrogen almost entirely disappears, and is succeeded by a strong smell of ammonia. A portion of the alcohol is then to be carefully distilled, when a precipitation of sulphur will follow; when the alcohol is cold, it is to be decanted and the sulphur removed; this process is to be repeated until there is no longer any precipitate of sulphur. The distillation is then to be continued until the liquid in the retort separates into two layers: the lower one is impure naphthalidam, the upper one a solution of this base in weak alcohol. Pure naphthalidam may be obtained from the alcoholic solution of the nitronaphtalase, saturated with ammonia and sulphuretted hydrogen, in which it exists as a sulphydrate, by the addition of sulphuric acid, when effervescence will take place owing to the disengagement of sulphuretted hydrogen, and sulphate of ammonia and sulphur be precipitated. More acid must then be added, when the liquid will appear a bouillie, from the deposition of the sulphate of naphtalidam, which is not very soluble in water any more than in alcohol. The salt is to be purified by two or three crystallizations in alcohol, dissolved in water, and supersaturated by ammonia, when a momentary turbidness follows, and the liquid becomes full of flattened, white, fine, silky needles of pure naphtalidam. It is an energetic organic base, combining with all the oxacids and hydracids; it melts at 120 deg., boils at 160 deg., and distils easily without decomposition —the result being a transparent, slightly yellowish liquid. Naphtalidam assumes a violet colour, when exposed to the air, and the more quickly if in the liquid state. It has a strong, peculiar, disagreeable odour, and a very bitter caustic taste; it has not any alkaline reaction with turmeric paper, and it forms salts with all the acids; it is a base without oxygen. An alcoholic solution of nitrobenzide saturated with ammonia, treated in a somewhat similar manner to the nitronaphthtalase, yields a yellow heavy oil of a rather agreeable odour, which M. Zinin calls benzidam. It mingles with alcohol and ether in any proportion, is insoluble in water, distills without decomposition at 424 degrees, assumes a red colour on long exposure to the air, or by the action of nitric acid, and combines with all the oxacids and hydracids. It has an acid corrosive savor, and a peculiar odour.

Action of Prussic Acid and the Alcaline Cyanurets on the Proto-Salts of Mercury.—Although the action of prussic acid on calomel had been observed by chemists previously, the especial notice of the profession had not been drawn to the subject until he year 1829, when M. Eugene Regimbeau stated, that when the chloride of mercury was added to an almond emulsion, the liquid assumed gradually a greyish colour, and a black powder was precipitated to the bottom of the bottle,—an effect which was not produced when the bitter almonds were not used; that is to say, when there was not any prussic acid present. M. Regimbeau believed, that during the reaction, hydrochloric acid and the cyanuret of mercury were formed, one proportion of the mercury being precipitated in a state of extreme division; but Soubeiran was of opinion that the changes were more complicated, and he did not believe that any metallic mercury was precipitated. M. Deschamps, of Avallon, afterwards shewed that, in addition, the bichloride of mercury resulted from the decomposition of the calomel; and further, that the hydrochlorate of ammonia was also formed, by which the cyanuret and bichloride of mercury were protected. This very important subject has been recently investigated by M. Mialhe, who is of opinion, that when an excess of prussic acid reacts upon calomel, aided by sufficient agitation, the mercurial salt is soon entirely decomposed, hydrochloric acid, bicyanuret of mercury, and metallic mercury being first formed, according to the following formula:—cl. 2, Hg. 2, + cy. 2, H. 2, = cl. 2, H. 2, + cy. 2, Hg. + Hg.; that is to say, that one equivalent of calomel being decomposed by one equivalent of prussic acid, there are formed one of hydrochloric acid, one of bicyanuret of mercury, and one of metallic mercury, because there is not any compound of cyanogen and mercury corresponding to the protochloruret. When this decomposition is concluded, and sometimes even before, the hydrochloric acid and mercurial cyanuret mutually decompose each other, so as to produce bichloruret of mercury and hydrocyanic acid; the decomposition, however, being only partial, as the action of the hydrochloric acid, is counterbalanced by the well-known affinity of cyanygen for mercury. The definitive product of the reaction, then, is bichloruret and bicyanuret of mercury, hydrochloric and hydrocyanic acids, metallic mercury, and traces of ammonia and formic acid—the two latter resulting from the reciprocal action of hydrocyanic acid and water. M. Mialhe does not believe that hydrochlorate of ammonia is formed in sufficient quantity to protect the mercurial salts. Beranger, of Lausanne, denied that the bichloruret of mercury is formed during this decomposition, because that salt is acted on by alcalies, and the resulting salt in this case is not, which is attributed by M. Mialhe, to the presence of the hydrocyanic acid; for as fast as the mercurial oxide is set at liberty, it combines with the prussic acid, and forms a cyanuret which is not influenced by the alcalies. Hydrocyanic acid behaves in a similar manner with all the proto-salts of mercury. It also decomposes its oxysalts, changing them into bycyanuret and metallic mercury, the free-oxacid not having the property of partially decomposing the bicyanuret. The action of the alcaline cyanurets on the proto-salts in general, and on the proto-chloride in particular, is very similar,—a new alcaline salt, the bicyanuret of mercury, is formed, and half the metal contained in the proto-salt is precipitated. The deuto-salts of mercury are also partially decomposed by prussic acid These enquiries are of the highest importance, inasmuch as the poisonous influence of the decomposed salts and acid, is at least double that of the hydrocyanic acid which has been employed. It is evident therefore, that neither calomel nor any other proto-salt of mercury should ever be combined with any preparation containing prussic acid or its compounds.

Prolapsion of the Cord.—In an interesting dissertation on prolapsus of the umbilical cord, Dr. Saxtorph of Copenhagen gives as the result of his enquiries as to the relative frequency of this accident, that of a grand total of 116,277 births, it occurred 480 times, or in the proportion of one in 242. The chief cause thereof, next to the attachment of the placenta near the os uteri, the cord rising from the lower edge, is, a large accumulation of liquor amnii distending the uterus, and rendering it so spherical that its inferior segment has no effect in preventing the cord slipping down. The other causes which have been assigned, viz., contracted pelvis, mal-position of the child, retort-shaped uterus, with pendulous abdomen are very doubtful. Naegele states, with reference to the attachment of the placenta near the os uteri, that of 50 placentæ which he examined, all of them having been attached to the lower and lateral portions of the uterus, in two only was there a central insertion of the cord; in the rest its distance from the edge varied from an inch and a quarter to an inch

and a half; in 11 cases the cord was inserted near the upper edge of the placenta, in all the others near the lower edge. He therefore considers that the insertion of the cord, near the orifice of the uterus must decidedly be looked upon as an important predisposing cause of prolapsus, and especially so the nearer the cord is inserted into that edge of the placenta which is nearest to the os uteri. If the edge of the placenta reaches to the os uteri, and the insertion of the cord is at this spot, or still more if the umbilical vessels are distributed upon the membranes, at a little distance from the edge of the placenta, presentation of the cord becomes a necessary result, so that when the membranes give way, prolapsus becomes inevitable. The mortality of children where the cord presents, is so large, that out of 356 births, only 161 children were born alive. This fatality is not owing to the degree of cold to which the cord is exposed, but to the pressure to which it is subjected during labour; hence the membranes remaining un-ruptured until labour is far advanced, is so important in ensuring the birth of a living child. So long as the membranes have not given way, experience proves that the cord presenting is but little affected by pressure, so that it still retains a strong and firm pulsation, and may change its position, so as ultimately to escape compression. If the membranes remain whole whilst the presenting part descends into the cavity of the pelvis, and if the early stages of labour are retarded, it generally happens that the last stage, during which the prolapsed cord is particularly exposed, passes over very quickly, this being of the greatest importance in preserving the life of the child, if the case has been left to be completed by the efforts of nature, while if artificial extraction be decided on, nothing can be a greater assistance to the operation than the membranes being un-ruptured. The cause of the death of the infant, judging from the appearances presented at an examination of the body, is asphyxia: some writers however consider it to be anemia and syncope, others plethora, and apoplexy, and others again suffocation and asphyxia. The treatment must vary according to the circumstances of the individual case. Busch of Berlin pointed out the value of the forceps in cases threatening pressure on the cord during the passage of the head after the operation of turning. Its use may be had recourse to also in delivering the head, when presenting. Michaelis saved the lives of twenty one children out of twenty-five cases of prolapsion of the cord by practising its re-position. The different kinds of treatment, recommended by authorities, are as follow:—1st, to leave it entirely to nature; 2dly, to re-place the prolapsed portion and retain it so; and then either to let the labor take its course, or terminate it by art; 3dly, to turn the child with or without artificial extraction; and 4th, to terminate the labor by the forceps.

Poisoning by Adulterated Tapioca.—A case of poisoning by copper has been recorded in the Auxiliaire Breton, caused by the ingestion of tapioca. The editor of that journal attributed it to the green substance employed in colouring the wrappers of the tapioca, but the following seems the more feasible. In order to prepare the tapioca, the fecula of the potatoe, moistened with water, is thrown upon a plate of copper, heated to 212 deg. Fah., when it immediately forms into unequal, hard, brittle lumps. The plate is not always kept clean; and if, when the preparation is finished, care is not taken to remove all the moist grains of fecula adhering to its surface, they get mixed with the hydrate and subcarbonate of copper, a very small quantity of which is sufficient to poison a large quantity of tapioca. If the fecula which is used has undergone a slight degree of fermentation (it will then contain a certain quantity of acetic acid), the copper-plate will be slightly acted on, and the tapioca will contain a small quantity of acetate of copper, quite sufficient to render the article dangerous. The presence of the copper may be easily detected, by making a hot jelly with the suspected substance, adding a few drops of vinegar, and keeping the clean blade of a knife in it for a quarter of an hour. If copper be present, the steel will be coloured by it in that time.

Laceration of the Brain.—Mr. Solly narrates the case of a cook, 69 years of age, who was admitted into St. Thomas's Hospital, February, 1841, in a state of insensibility, having received a large contused wound, exposing the bone over the right eye-brow, but without any fracture. The left pupil was much contracted and fixed; the right could not be seen; the breathing stertorous; pulse 96, full and not easily compressed; fæces and urine passed involuntarily; great rigidity of the muscles, especially of the right arm and left leg. She survived till the afternoon of the next day. On examination, the brain did not seem to fill the skull completely; the tentorium was smeared with blood, which was also extensively effused into the left ventricle, and more slightly into the right; this effusion appears to have resulted from laceration of the left corpus striatum and thalamus, also of those fibres of the great commissure which form the anterior part of the roof of the left ventricle. The lacerated corpus striatum and thalamus were forced into the right ventricle under the fornix, and when first observed, looked almost like a medullary tumor with an ulcerated surface. Mr. Solly considers that in this case the brain was lacerated by the contre-coup, to which it was especially exposed from its diminished size in relation to its containing cavity—the result of senile atrophy.

Effects of Phimosis.—Dr. Golding Bird related at a meeting of the Medical Society of London, the case of a child that had been recently under his care at the Finsbury Dispensary. The little patient was brought under the doctor's notice from his suffering every time of making water, severe pain, referred to the penis. This increased so much, that he avoided micturition as much as possible. It continued for about a quarter of an hour after emptying the bladder, which, on examination, was found not to contain a stone. The prepuce was long and tortuous, and had so filiform an aperture that it was difficult to introduce the finest sound. It was always red and inflamed, and Dr. Bird, considering that the mechanical obstruction it presented to the passage of the urine, had some share in causing the agonizing pain on micturition, requested one of his colleagues to perform circumcision, which was ultimately performed with marked benefit, the pain immediately disappearing, and the little patient improving in health and strength. The child died afterwards from measles, and, on examination of the body, the bladder was found thickened, and as full of urine as it could hold, being about the size of an orange; the ureters on both sides were dilated, the right being the larger, and as big as a fore-finger. The pelvis of the right kidney was dilated, so as to hold a pint of water, and was distended with urine; the true renal structure appeared as a mere appendix to this pelvis, being thinly stretched over it. The left kidney had undergone a similar change, but to a very much less degree. No other disease was found in the abdomen. Dr. Golding Bird believed that the whole train of disease was excited by the contracted prepuce acting as a stricture interfering with the exit of the urine, and thus that the morbid alterations of the urinary organs were produced exactly as in stricture in the urethra of the adult.

Myelitis.—Dr. Gobee, of Utrecht, has published four cases of acute inflammation of the spinal chord in his "clinical contributions to the theory and practice of medicine and surgery." Two of these are well marked. The first occurred in a soldier, 24 years old, convalescent from slight inflammation of the fauces. The attack was simultaneous with erysipelas of the nose and cheeks. The patient complained of a burning and quite intolerable pain in the loins, fixed to that one place, not shifting in the least, and so intense that when, in examining the spine, the first lumbar vertebra was touched, he shrieked out. Before, during, and after the examination he had shocks which put the whole trunk in motion, returned every two or three minutes, and could only be compared to those from electricity or from strychnia. Sometimes the trunk only was thus affected. The speech was difficult and indistinct. Antiphlogistic measures with calomel were had recourse to, but with little benefit; in the course of the same day the pain in the loins and sacrum became excessive, and the shocks continually recurred. The night was passed without sleep, and equally so without delirium. The erysipelas continued to spread, and general pain was complained of whenever the body or limbs were touched. Small doses of tartarised antimony were next given, and the warm bath was had recourse to, with relief to the lumbar pain, and shocks. The second night and the next day, he had but little pain in the back, and the shocks were less frequent; touching the limbs was painful, and they were stiff and bent, so that the fore-arm could hardly be straightened. The following night he was delirious, the fæces and urine passed involuntarily; in the afternoon of the next day he became paraplegiac; all night he was shrieking, and the next day he died. After death the cerebral and spinal dura mater, was found very red, partly from the fulness of its own blood vessels, and partly from the pia mater being seen through it. The injection of the latter was so great that over its whole surface, from the cerebrum to the extremity of the spinal marrow, not a spot could be found without excessively distended capillaries. Between the arachnoid and the brain and spinal marrow, there was neither serum nor any morbid appearance. The color and consistence of the surface of the brain were natural, so were the choroid plexuses, the corpora quadrigemina, and the thalami optici, but the corpora striata and the cerebellum were very soft. The medulla oblongata, as well as the cervical and dorsal portions of the chord were natural; but from the lowest dorsal vertebra to the cauda equina, the softening was such that the spinal marrow, during examination, remained like pulp upon the fingers, and had lost all organic structure. Its color was more yellow at this, than in the healthy part. No pus was to be found: all the other organs were healthy. In the second case, the attack came on more gradually, the patient surviving to the 17th day; on the 14th day of his illness, he shrieked as if from pain, when his abdomen, and especially the inguinal region, was touched. He was also much emaciated, and the fæces passed involuntarily. The excessive sensibility increased and extended, so that for two days before he died, he shrieked when any part of the limbs or abdomen was touched. On the examination of the body, a large quantity of serous fluid was found between the membranes of the brain. The pia mater was very red,

and, at the 9th and 10th dorsal vertebræ, was covered with vascular patches. The grey substance of the brain was discolored and yellowish; at the base there was a greenish transparent jelly-like false membrane in the tissue of the arachnoid. On the chiasma the arachnoid was very thick, and had on it a tuberculous body of the size of a pea, which had probably pressed on the optic nerve and the first branch of the first pair. The surface of the hemispheres, the cerebellum, corpus callosum, fornix, corpora quadrigemina, thalami, corpora striata, and the spinal marrow, from the medulla oblongata to the cauda equina, were reduced to a pulpy consistence, so that the finger could be passed through them with scarcely the least resistance. The difference between the white and grey substances of the chord was also indiscernible, for it had all one whitish-yellow pulpy appearance. There were two ounces of bloody serum in the right lateral ventricle. The other organs were healthy. From these and the other two cases, Dr. Gobee draws the conclusions, that the shocks of the trunk, like those produced by electricity or by strychnia, are pathognomonic of the acute stage of inflammation of the chord, and that the exaggerated sensibility of the body, and the expression of pain when any part of it is touched, appear to be as good indications of the softening having taken place.

Reparative Energies of Woman.—Profuse menstruation does not weaken a woman in proportion to the quantity of the blood lost; indeed, as a general remark, it seems to be true that women can bear copious hæmorrhages much better than men. They recover their strength and colour much more quickly. A man will remain pale and enfeebled for some months after a great loss of blood, but a woman, under equally favourable circumstances, will be herself again in one half the time. The menstrual evacuation required that nature should endow the female constitution with more powerful means to repair losses of blood, the hæmorrhages before and after confinement, the drain, so to speak, on the system for the nourishment of the infant, &c., demanded more efficient reparative energies. A practical consequence of immense importance may be deduced from these considerations. They impress upon us the necessity of placing but little reliance on blood-letting in the treatment of women affected with sub-inflammatory affections, in consequence of the rapidity with which losses of blood are repaired, and consequently indicate the superior value of a regulated and spare diet, by which the supply of nutritive matter to the system may be kept in check. This important truth is too often quite overlooked in practice, and, in very many cases, the most judicious medical treatment is virtually rendered null by inattention to the arrangement of the diet.

Bright's Disease.—The most important facts ascertained as to the progress of cases in which this morbid state of the kidney exists, are the following:—1st. That when the urine, although albuminous and of low specific gravity, is in quantity greater than natural, (so that the usual amount of solid matter may pass off from the kidneys in a given time,) the general health may be tolerably good for a considerable number of years; although there is a liability to very various diseases, making a very cautious regimen necessary. 2nd. That many such persons are found to be simultaneously affected with other diseases, chiefly of the liver, or of the heart, which are originally of the same character, and which of course increase their liability to disease. 3rd. That such persons are very liable, particularly on exposure to cold, to attacks of dropsy. 4th. That they are also particularly liable (with or without such dropsical attacks) to sudden inflammation, especially of the chest. 5th. That they are liable to organic diseases of the brain. 6th. That many of them are subject to sickness and vomiting, independently of liver disease, and especially to diarrhœa; those who are subject to the diarrhœa being perhaps the least liable to the dropsical effusions. And 7th. That when the quantity of urine becomes less (as very generally happens in the progress of such cases), and its specific gravity and the quantity of solid matter and even of albumen in it diminish at the same time, we must expect, not only that these complications will become more frequent and intractable, but that they will be attended with more or less of the characteristic effects of the presence of urea in the nervous system, particularly drowsiness, spasms, indistinct vision, &c., and ultimately delirium and fatal stupor.

Pneumonia in Children.—Mr. Berton speaks of the frequency of pneumonia unaccompanied by any well-marked symptoms, or marked by those which are characteristic of diseases of other organs than the lungs. In many cases this disease appears under the form of a simple acute bronchitis, and runs its course in as short a time as that malady; in other instances, the degree of emaciation to which it reduces the patient, and the slowness of its advance towards a fatal termination, might lead any one to mistake it for phthisis. This is the case more especially when pneumonia attacks patients of weak constitution, and in feeble health, when it co-exists with other affections, and advances in a latent manner; circumstances by no means unusual since it seldom happens that marks of inflammation of the lungs are found in young subjects, without other lesions being discovered elsewhere. Numerous affections either usher in, or come on during the course of pneumonia in children; the complication of inflammation of the lungs with cerebral symptoms, is by no means unusual, and always of a very serious nature.

Pleurisy in Children.—M. Baron met with traces of pleurisy in the bodies of 159 out of 403 children, or in rather more than one in three. From his researches it further results—that the frequency of pleurisy differs greatly at different periods of childhood; that it occurs oftener during the first five days after birth than at any other time in the first month of infancy; that it diminishes in frequency from the first month to the second year; that from the second to the third year it is more frequent than from the third to the fourth, or from the fourth to the fifth year. It continues rare during the remainder of childhood, and is especially so from the thirteenth to the fourteenth year. M. Barrier, whose observations were made among children from two to fifteen years of age, states that he has never met with a case of pleurisy unconnected with pneumonia in children under six years of age; that from six to ten it is rare; but that from ten to fifteen it is as frequent as in the adult.

Involuntary Spermatic Discharges.—In cases of involuntary pollutions, says M. Lallemand, there exists almost always at the same time irritation and debility, excessive sensibility, and want of tone in the spermatic organs. These two conditions may be observed to be present simultaneously, but in variable proportions; this precisely it is which disconcerts the practitioner and causes despair in the patient; since antiphlogistics and tonics, emollients and excitants, repose and fatigue, produce good or bad effects in the same individual, according as the irritation or the debility predominates at the moment. Cauterization has the advantage of combatting at the same time these two orders of symptoms (debility and irritability); by destroying the surface of the engorged tissues, it alters their morbid sensibility; the resolution of this state produces a contraction of the parts, which gives them new energy; hence it is that cauterization in the majority of cases suffices to bring about a cure.

Fractures of the Patella.—Mr. Walker, of Newcastle-upon-Tyne, recommends an apparatus for the treatment of these fractures, of which the following is a description:—The leg to be placed on a fracture-splint, and a strong leather band, padded, to be buckled on behind the upper portion of the divided bone, having a ring inserted on each side, and a similar band to be placed behind the lower portion of bone, having a catch on each side, corresponding with the rings in the opposite band, from which catches, a strong cord to commence and pass through the rings in the upper band; then, proceeding down to a screw-frame, similar in action to the tourniquet, only larger, which is fixed on the back of the foot-board attached to the splint. Mr. Walker considers the advantages of this plan to be, that the divided portions of the bone can be brought together with the greatest nicety, and the relaxation (if any) can be recovered with little disturbance of the parts.

A Clear Style.—A Mr. Atkinson, a correspondent of the *Lancet*, in a letter the real object of which it were puzzling to discern, writes thus:—"My opinion as to the most efficient remedies in tuberculous cachexia is, that those chemical products containing the largest proportion of carbon, in concentration (!) with small portions of hydrogen and nitrogen, have such a sedative action upon the blood, that the chemical vital motion is rendered more harmonious, as it were, by the operation of these substances." Our learned friend has evidently a desire to emulate Liebig in his application of chemistry to the explanation of the phenomena of disease, but unlike the philosopher of Giessen, his intellect is in too confused and disturbed a condition to enable him to throw any light upon the subject. The absurdity of his paragraph cannot be equalled, save by its wretched construction—"None but himself can be his parallel."

Indian Hemp.—Dr. Farre states that the apocynum cannabinum is sold in London under the name of Indian hemp, although it has no resemblance to the true plant, except in possessing a tough fibrous bark, which is applicable to the same purposes in the arts. Its officinal part is the root, which is powerfully emetic and cathartic. The parts sold for the cannabis indica are the leaves and the follicles filled with numerous silky seeds. The surreptitious plant is a native of Canada and Virginia.

Strangulated Hernia.—Mr Toynbee narrates a case of strangulated femoral hernia, occurring in the person of a woman 50 years of age. Nothing unusual presented itself in the steps of the operation until the hernial sac was exposed; it was of the size of a small walnut, very tense, and perfectly black. Upon laying it open, it was found to owe a great part of its size to the presence within it of a large quantity of dark-coloured blood, of the consistence of treacle. At its upper part was a small rounded mass, also quite black, and irregular to the touch. Several coatings of firm fibrine were removed from its surface, and in the centre a very small portion of omentum was exposed, having a dark colour but possessing its natural consistence. The stricture was divided and the hernia returned; no unfavourable symptom followed, and the patient recovered in three weeks.

DRUG PRICE LIST FOR THE PRESENT WEEK.

DRUGS.	Price. £ s. d.	to £ s. d.
Alkanet Root, bd. ......cwt.	0 14 0	to 0 16 0
Aloes, Barbadoes	5 0 0	16 10 0
Epatica, bd.	2 0 0	12 0 0
Cape, bd.	1 13 0	2 2 0
Alum, British.............ton	9 10 0	10 0 0
Roch. ....cwt.	1 3 0	0 0 0
Ambergris, Grey.........oz.	0 5 0	0 7 0
Anchovies..........dble. brl.	1 4 0	0 0 0
Angelica Root ....dpcwt.	1 0 0	1 15 0
Annatto, Flag, dp.........lb.	0 0 6	0 0 8
Roll ....dp.	0 0 5	0 0 8
Antimony, Crude........cwt.	1 16 0	1 18 0
Ore, bd. ......ton	15 0 0	17 0 0
Regulus Cps. cwt.	2 10 0	3 10 0
Bowls	0 0 0	0 0 0
Arrow Root.................	0 0 5	0 1 4
Arsenic, White.........cwt.	0 0 0	0 0 0
Red	2 7 0	2 10 0
English White......	0 13 0	0 0 0
Yellow.....	0 18 0	0 0 0
Boracic Acid............cwt.	2 2 0	0 0 0
Balsam, Canada ....lb.	0 1 0	0 1 2
Capavi, bd..........	0 1 0	0 1 3
Peru, bd............	0 1 3	0 2 6
Tolu, bd............	0 1 4	0 2 2
Bark, Peruvian, bd. pale..lb.	0 0 6	0 0 10
Good	0 2 3	0 2 9
Mid do.....	0 1 3	0 1 9
Crown......	0 0 9	0 3 0
Yellow, Flat	0 2 9	0 4 4
Quill	0 0 0	0 0 0
Red, Flat	0 3 6	0 6 0
Quill.........	0 1 6	0 2 0
Cascarilla, bd......cwt.	1 0 0	1 18 0
Quercitron ....dp.	0 7 0	0 12 0
Oak English... per load	19 0 0	22 0 0
Foreign ... per ton	9 0 0	10 0 0
New S. W.......	0 0 0	0 0 0
Berrles, Bay............cwt.	1 5 0	1 6 0
Juniper, Itallan	0 9 6	0 10 6
German....	0 10 6	0 13 0
Turkey, Yellow	2 5 0	3 0 0
Persian, do.	7 0 0	11 10 0
Black Lead, E. I.........cwt.	0 6 0	0 7 0
Malaga.....	0 10 0	0 18 0
German	0 12 0	0 18 0
Dust	0 0 0	0 0 0
Borax, or Tincal, bd.....cwt	1 12 0	2 0 0
E. I. Refined, bd.....	2 5 0	2 10 0
English Refined......	2 15 0	2 18 0
Brimstone, Rgh. bd... ..ton	5 10 0	0 0 0
Roll	9 10 0	10 0 0
Camphor, Unrefined ....cwt.	9 10 0	10 0 0
Dutch, bd.....cwt.	9 10 0	10 0 0
Refined........lb.	0 2 11	0 0 0
Cantharides, bd.............	0 2 4	0 2 6
Capers, French ....cwt.	4 0 0	9 10 0
Capotts	0 0 0	0 0 0
Cardemoms, Malabar, bd.. lb.	0 2 2	0 3 0
Long Longs	0 1 8	0 2 0
Ceylon	0 1 0	0 1 2
Castor, America..........lb.	0 19 0	1 5 0
Castor Oil, America ......lb.	0 0 3	0 0 6
E. I. bd.	0 0 4	0 0 7
Chillies, E. I. bd.........cwt.	0 0 0	0 0 0
China Root, bd..........cwt.	2 4 0	2 6 0
Cobalt, bd.................lb.	0 0 0	0 0 0
Coculus Indicus, bd. ....cwt.	0 8 0	0 12 0

DRUGS, &c. continued,—	Price. £ s. d.	to £ s. d.
Colocynth, Turkey .....dplb.	0 2 0	to 0 3 3
Spanish	0 1 4	0 1 9
Colombo Root, bd.......cwt.	0 15 0	1 5 0
Copperas, Gr. on bd .....ton	4 15 0	0 0 0
Blue	1 17 0	2 0 0
Cream Tartar, d.p. Fr...cwt.	0 0 0	0 0 0
Venetian	2 18 0	3 4 0
Cubebs, bd. ....cwt.	2 5 0	3 0 0
Cowries	3 0 0	3 3 0
Dragon's Blood, bd..........	2 10 0	6 0 0
Reed...............	7 9 0	16 0 0
Emery Stone................	9 10 0	11 0 0
Essential Oils,		
Cloves, bd......lb.	0 7 0	0 10 0
Carraway, dp.	0 8 9	0 9 0
Lavender.	0 7 6	0 8 0
Peppermint, bd....	0 8 0	0 8 6
Spike	0 4 0	0 0 0
Anniseed, bd. ..lb.	0 6 6	0 0 0
Cassia, bd.........	0 8 0	0 9 6
Cajaputa, bd. ..oz.	0 0 1	0 0 3
Cinnamon, bd.....	0 2 3	0 3 6
Mace (expd.) bd..	0 0 2	0 0 3
Nutmegs, bd......	0 0 8	0 0 11
Bergamot, dp... lb.	0 9 9	0 0 0
Lemon	0 5 0	0 0 0
Orange	0 4 6	0 5 6
Rosemary	0 1 8	0 2 6
Thyme	0 2 9	0 3 0
Otto Roses oz.....	0 10 0	0 10 6
Almonds	0 1 7	0 1 11
Galangal Root, bd......cwt.	0 12 0	0 14 0
Galls, in sorts ....cwt.	2 1 0	2 10 0
Green or White	2 0 0	2 10 0
Blue	2 18 0	3 4 6
E. I. Blue, bd.	2 15 0	3 1 0
Gentian Root, bd........cwt.	0 18 0	1 4 0
Glue, Best Town........cwt.	2 12 0	2 14 0
Inferior	2 0 0	2 8 0
Foreign	0 0 0	0 0 0
Guinea Grains, bd..........	2 0 0	2 10 0
Gums,		
Ammoniac, Lp. bd. cwt.	0 0 0	0 0 0
Drop......	0 0 0	0 0 0
Arabic, E. I. bd.......	1 16 0	3 10 0
Cape	0 10 0	0 16 0
Turkey, fine ..	8 0 0	9 17 6
2nds and 3rds	4 5 0	7 0 0
Barbary, Brown, bd ..	2 0 0	3 0 0
White.	4 10 0	5 0 0
Gedda, bd............	3 5 0	0 0 0
Animi, washed, bd	4 0 0	9 0 0
scraped..............	6 10 0	9 10 0
Copal.....................lb.	0 0 6	0 4 0
Assafœtida, bd...........cwt.	1 10 0	4 4 0
Benjamin, 3rds, bd..........	4 0 0	10 10 0
1st and 2nds......	15 0 0	50 0 0
Gamboge, bd......... :....	14 0 0	21 0 0
Galbanum...................	3 10 0	4 10 0
Guiacum.............. ......lb.	0 0 4	0 2 0
Myrrh, E. I. bd........cwt.	4 0 0	11 11 0
Turkey..............	0 0 0	0 0 0
Mastic......................lb.	0 2 10	0 4 6
Olibanum, bd. ....cwt.	1 6 0	2 16 0
Sandrack, bd...............	3 5 0	3 10 0

DRUGS, &c., continued,—	Price. £ s. d.	to £ s. d.
Senegal, garbled, bd.........	4 0 0	4 4 0
Tragacanth, Picked	14 0 0	15 0 0
Sorts	5 0 0	8 10 0
Seedlac............cwt.	0 15 0	1 2 0
Lac, Sticklac, Bengal........	0 17 0	1 5 0
Siam, &c......	1 10 0	2 0 0
Shellac, Liver......cwt	1 16 0	2 4 0
DT............	2 0 0	2 6 0
Orange	2 13 0	2 16 0
Block	1 8 0	2 0 0
Hellebore Root ....cwt.	2 0 0	2 10 0
Honey, Fine	2 10 0	5 0 0
Iceland Moss ....cwt.	0 0 2	0 0 3
India Rubber, solid	0 0 3	0 0 8
bolttles........	0 0 8	0 1 0
small.........	0 1 6	0 1 9
Ipecacuanha, bd...........lb.	0 1 0	0 1 3
Isinglass Leaf, 1st sort......	0 10 0	0 11 0
2nd sort......	0 9 0	0 10 6
Simovia	0 2 6	0 3 0
Siberia Purse	0 5 0	0 6 0
Short Staple, 1st......	0 8 0	0 11 6
Long ditto............	0 10 0	0 11 0
Isinglass, Brazil	0 1 0	0 4 10
Jalap, bd..................lb.	0 2 2	0 2 3
Juice of Lemon...........gal.	0 2 0	0 0 0
Liquorice, Ital. d.p. ....cwt.	4 15 0	5 15 0
Root, dry, bd.......	1 0 0	1 5 0
Magnesia, English...........	3 15 0	0 0 0
Manna, Flakey, bd.........lb.	0 1 0	0 4 6
Sicily, bd............	0 0 10	0 1 8
Musk, good and fine, bd.. oz.	1 10 0	1 15 0
Nux Vomicæ, bd.........cwt.	0 7 0	0 17 0
Olives, French half-bris 12 gls	3 0 0	4 10 0
Spanish......keg 2 gls	0 9 0	0 10 0
Opium, Turkey, bd.........lb.	0 6 6	0 7 9
Egyptian	0 0 0	0 0 0
Orchella, Can.............ton	0 0 0	0 0 0
Cape de Verd	0 0 0	0 0 0
Madeira..........	50 0 0	0 0 0
Orpiment, E. India, bd......	0 0 0	0 0 0
Orange Flower Water	0 0 8	0 1 0
Peel ....cwt.	1 16 0	0 0 0
Orris Root, d. p. ....cwt.	1 0 0	2 10 0
Pelltiory Rool ....lb.	0 1 0	0 1 0
Pink, Root............... lb.	0 0 9	0 1 2
Pitch, Burgundy.........cwt.	0 10 0	0 15 0
Pumice Stone, sorts......ton	6 0 0	7 0 0
Quassia .... cwt.	1 10 0	1 12 6
Quicksilver	0 4 6	0 0 0
Rhubarb, round, bd. ......lb.	0 1 0	0 4 0
flat	0 2 0	0 4 3
Dutch, trimd......	0 4 6	0 6 0
Russia	0 11 0	0 11 6
Saccharum Saturne, bd....lb.	2 4 0	2 6 0
Saffron, Spanish ....lb.	1 15 0	1 16 0
Sago, common, bd.......cwt.	0 8 0	0 10 0
Pearl .... :...	0 9 0	1 1 0
Sal Ammoniac, E. I. bd. cwt.	2 0 0	2 2 0
English, Refined....cwt.	2 4 0	2 6 0
Salls, Glauber	0 7 0	0 0 0
Epsom	0 11 6	0 0 0
Salep ....cwt.	5 0 0	6 0 0

DRUGS, &c., continued,—	Price. £ s. d.	to £ s. d.
Sarsaparilla, Bra. bd. .. lb.	0 0 10	to 0 1 8
Honduras bd. ..	0 0 10	0 1 6
Vera Cruz, bd...	0 0 0	0 0 0
Jamaica, bd. ..	0 1 0	0 2 0
Sassafras Root.. .. .. ton	7 0 0	8 0 0
Scammony, Smyrna .. lb	0 0 0	0 0 0
Aleppo, 2nds, bd..	0 8 0	0 15 0
fine	0 18 0	1 5 0
Seeds, Anni .. .. ..cwt.	0 0 0	0 0 0
German, duty paid ..	1 5 0	1 15 0
E. I. Star, bd.	3 4 0	3 10 0
Cummin, bd... ..cwt.	1 0 0	1 5 0
Carraway, For. bd. ..	1 3 0	1 10 0
Seneka Root, bd. .. .. lb.	0 1 9	0 2 2
Senna, Alexandria .. .. lb.	0 0 11	0 1 1
Smyrna	0 0 9	0 1 6
East India, bd... ..	0 0 5	0 0 6
Tinnevelly..	0 1 8	0 2 3
Smalts, Saxon, FFFE .. lb.	0 0 0	0 0 0
Danish, do.	0 1 6	0 1 7
Other sorts in	proportion	
Snake Root, bd.. .. .. lb.	0 0 10	0 1 4
Soap, Naples, soft	0 1 6	0 1 9
Castile, hard.. ..cwt.	3 10 0	3 17 0
Soy, bd. .. .. .. gallon	0 5 9	0 6 6
Sponge, fine .. .. .. lb.	0 14 0	1 0 0
ordinary	0 3 0	0 11 0
Sulphate of Quinine .. oz.	0 8 0	0 8 6
Squills, dry .. .. .. lb.	0 0 1	0 0 2
undried	0 0 0	0 0 0
Spermaceti .. .. .. lb.	0 1 8	0 1 9
Tamarinds, W. I. .. ..cwt.	1 5 0	3 10 0
E. I. bd.	0 15 0	1 5 0
Tapioca, bd. .. .. .. lb.	0 0 4	0 0 9
Turmeric, bd. Bengal ..cwt.	0 15 0	0 18 0
Java	0 12 0	0 18 0
Java, green ..	0 7 0	0 10 0
China..	1 0 0	1 8 0
Terra Japonica, black	0 13 0	0 14 0
Pale in squares	0 0 0	0 0 0
De Sienna	0 0 0	0 0 0
Valonia Smyrna .. .. ton	14 0 0	18 0 0
Picked Morea	15 0 0	17 0 0
Viuelloes, Brazil, bd. .. lb.	0 10 0	0 11 0
Vera Cruz	3 0 0	4 0 0
Verdigrease, For. D. P... ..	0 1 2	0 1 3
English	0 1 3	0 0 0
Vermillion, China, bd. .. lb.	0 5 0	0 5 6
English	0 5 6	0 5 10
Vitriol, blue .. .. ..cwt.	1 16 0	1 17 0
Foreign, white	0 16 0	0 17 0
English, do.	1 4 0	1 5 0
Oil of .. .. .. lb.	0 0 1	0 0 0
Wax, Mogadore, bd.. ..cwt.	6 10 0	7 15 0
American, d.p.	7 10 0	8 0 0
Russian, d.p.	9 0 0	9 5 0
Hambro' d.p.	8 10 0	9 0 0
East India, d.p.	7 0 0	8 15 0
African, d.p.	7 10 0	7 10 0
White Hambro'	9 15 0	10 10 0
English .. .. ..cwt.	9 10 0	9 15 0
Cape	7 10 0	9 0 0
Weld, English .. .. ..load	0 0 0	0 0 0
Woad .. .. ton	0 0 0	0 0 0
Wood, Sapan Bimas, bd. . ..	10 0 0	13 10 0
Siam..	6 0 0	8 0 0

Acute Articular Rheumatism.—In the course of some clinical remarks on acute articular rheumatism, Dr. Bellingham observes, with regard to the treatment, that a great variety of exclusive methods have been recommended and practised. Thus, some French practitioners trust to copious and frequent bleeding. In this country opium in large doses has been proposed; others employ the preparations of colchicum; some trust to mercury; and some prefer the sulphate of quinine, or nitrate of potash in very large doses. Laennec recommended tartarized antimony administered in the same doses as in pneumonia. The obvious indications of treatment are,—to subdue the inflammatory fever which accompanies the disease, to diminish the pain, and to prevent the complaint from passing into a chronic state; at the same time to lessen the chance of the extension of the inflammation to more important or vital organs, or, if this should supervene, to employ a method which will subdue it at the same time with the primary disease. None of these exclusive plans of treatment fulfil these indications completely. Thus, when acute rheumatism is treated on Bouillaud's plan by frequent and copious abstraction of blood, the disease is liable to prove tedious, or to pass into the chronic form, and pericarditis or endocarditis appear more liable to supervene; indeed, almost every one of Bouillaud's cases (reported in his *Clinique Medicale*) is stated to have been complicated with a slight or severe attack of endocarditis. Mercury, carried to the extent of salivation, may shorten the disease, but will leave the patient in a debilitated state, and very liable to a relapse. Colchicum, in sufficient doses to make the requisite impression, will seldom be tolerated, and must often be discontinued. Quinine, in the large doses in which it has been employed by some French practitioners, appears to be a dangerous practice; in ordinary doses it is often beneficial in the chronic forms of rheumatism, and is often resorted to during convalescence. The treatment by opium alone, more recently introduced, never had many advocates, and must be an unsafe practice if pericarditis complicates the disease. Dr. Bellingham has had no experience of the nitrate of potash, and tartarized antimony is seldom or never trusted to now. The treatment adopted by him in the three cases which gave rise to the clinical remarks, consisted of a combination of some of the exclusive methods just mentioned, fulfilling as nearly as possible the indications of treatment previously described. Opium was given in sufficient doses to mitigate pain and procure sleep, but combined with calomel, which not only prevented its constipating action, but exerted its own peculiar action upon the inflammation. This combination was administered only at bed-time; during the day colchicum was given, and when it did not act upon the bowels, the ordinary senna mixture was employed to produce this effect. The wine of colchicum was at first used, and afterwards the extract of the acetate, but neither of these proving useful, the tincture of the colchicum seeds was ultimately substituted. Dr. Bellingham observes that the last-named preparation appears to be the most certain and most active, and far superior to the wine, which he has found to be sometimes almost inert. In one of the three cases, in which the symptoms were most intense and the inflammatory fever very high, venesection was practised with advantage.

Large Nasal Tumour.—Dr. Valentine Mott, of New York, was consulted by a cabinet-maker, 32 years of age, who had had a tumour form in the left nostril ten years previously, and which many surgeons had attempted to remove by the forceps or ligature, but unavailingly. The patient said as many as five hundred attempts had been made by about fifty different practitioners; portions of it were removed from time to time, each operation being attended with much pain and hæmorrhage. His sufferings were very great. Dr. Mott, having also failed to make the least impression on the tumour with the forceps or ligature, determined on the following operation, having for years been in the habit of recommending a similar one for the removal of the inferior turbinated bone, when affected with carcinoma:—He commenced an incision through the soft parts a little on the side of the mesial line of the internal angular process of the os frontis, and extended it downwards to the upper lip, which was divided about three lines from the angle of the mouth. Two flaps were then reflected; the inner including the cartilaginous parts of the nose, and the tissues covering the os nasi of the left side—the outer laying bare the bone, as far as the infra-orbital foramen. The anterior part of the tumour was now somewhat more distinctly seen, and the nasal cavity was further exposed, by sawing vertically through the os nasi as far as the transverse suture, so as to avoid the descending plate of the ethmoid. The superior maxillary bone was now divided in a line from

the upper part of this cut to a point opposite the second bicuspid tooth, and on a level with the floor of the nostrils. Another section was made from the termination of the last, extending horizontally inwards towards the vomer. The osseons parts, comprising the os nasi, a considerable portion of the superior maxillary bone, and the os spongiosum inferius were then detached. The connections of the tumour were partially separated; but the disease was so extensive, that a part had to be removed through the anterior opening, before the posterior attachment could be liberated. These having been detached, the larger portion of this extensive disease, which passed into the pharynx and completely plugged up the posterior nares, was removed by introducing through the mouth a large curved vulsellum and forceps, and seizing the mass as it descended into the pharynx. The patient did not have a bad symptom afterwards, and was dismissed, cured, in a fortnight.

Tracheotomy in Croup.—We are of opinion, says M. Gendron, that practitioners frequently hesitate to perform this operation, owing to the slender chances of recovery which it often presents; some of the circumstances which would warrant a person in practising it without hesitation may be worth mention. Whenever the voice becomes stifled, the respiration hissing, when the patients make great muscular efforts in expiration, when the cough is seldom and suffocation imminent, and the face has lost its natural colour, it is probable that the approaching asphyxia results from some obstacle to the passage of the air in the larynx itself; and in such cases opening the trachea re-establishes respiration, and permits the application of caustic to those surfaces which the diphtherite has reached. The operation still presents some chance of success when the cough, more frequent but loose, announces bronchial croup; the looseness of the cough gives reason to hope that the flakes of false membrane will be speedily detached, and a two-fold way is thus opened for their escape. If, on the contrary, the voice and respiration are dry and insonorous; if the voice had assumed the stifled character long before the first paroxysm of suffocation; if the inspiration has a blowing rather than a hissing sound, and the expiration is short, quick, and easy; if, in spite of the hoarseness, the patient's articulation is distinct, and effected without any great effort of the muscles of the neck; if the chest is largely dilated,—the asphyxia is bronchial, the false membrane is adherent, tracheotomy would produce no change whatever in the respiration, and would not even have the advantage of retarding the patient's death.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Friday, May 20th, 1843:—

W. C. Small, D. Grantham, E. Wright, W. W. Kershaw, S. Wilson, W. G. Carter, A. T. Thomson, B. P. M'Donogh, F. Kelly, C. T. Male.

ADVERTISEMENTS.

London: Printed and Published by JAMES ANGERSTEIN CARFRAE, 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex.—June 3, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 194. Vol. VIII. LONDON, SATURDAY, JUNE 10, 1843. PRICE FOURPENCE. Stamped Edition, 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper, and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per Half-year, Post-free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE VIII.

I propose to-day to give you a short account of the organic *colouring matters* and their various applications; this is a very extensive and a very complicated subject, and a mere outline of it is all that our time will admit of.

As regards the mineral kingdom, it is curious to observe, that the metal iron, under some form or other, is the principal source of colour, and the colour of the blood has by some been referred to the same source; but although it be quite true that what are called the *blood globules*, those minute vesicles upon the presence of which the colour of that fluid depends, yield, along with their colouring matter, a considerable proportion of iron; yet it is doubtful how far the iron and the colouring matter may or may not be independent of each other.

There is another organico-ferruginous colour, if I may so call it, of great interest to the chemist, and of much use in the arts, which is familiarly known to you under the name of *Prussian blue*, it having been discovered more than a hundred years ago by Disbach, a colour-maker at Berlin. The process for obtaining it consists in calcining a mixture of animal matter, such as horn, hoof, clippings of skins, and so forth, along with potash, in an iron vessel; a good deal of practical skill is requisite in the management of the heat, and the materials require constant stirring: the result is a black semifused mass, which is afterwards lixiviated with water; the solution, filtered and evaporated, yields yellow crystals, and when added to a solution of peroxide of iron gives a deep blue precipitate. Now the yellow salt to which I have adverted, and which is largely manufactured at Glasgow, and of great beauty and perfection, is prussiate of potash, or, as it is scientifically called, *ferrocyanide of potassium*; and the blue precipitate which it throws down from solutions of iron is Prussian blue, or *ferrocyanide of iron*. The theory of the formation of Prussian blue is briefly this,—by the action of heat on the animal matter, potash, and iron, the compound which we have just called ferrocyanide of potassium is formed, the formula of the crystals of which is,

$$Fe, K^2, 3\,(NC^2) + 3\,(HO.)$$

Now, if we represent NC_2, which you will recollect is cyanogen, by Cy, the above elements may be so arranged as to represent (independent of water of crystallisation), a compound salt, including 1 atom of cyanide of iron, and 2 atoms of cyanide of potassium, or Fe Cy, 2 (K Cy); and if you consider the relation of the 3 atoms of water to these elements, you will observe that the hydrogen of the water is exactly in the requisite proportion to convert the cyanogen into hydrocyanic acid, and its oxygen in the proportion required to form oxides of iron and potassium; so that looking at the salt thus constituted, it has sometimes been assumed as a compound of the hydrocyanates of iron and potassa. Prussian blue is a compound of 7 atoms of iron and 9 of cyanogen; it is, therefore, a cyanide of iron: in what way its elements may be regarded as grouped so as to form proximate constituents, or in what way water essentially contributes to it, has not been satisfactorily determined. When Prussian blue is carefully prepared and properly dried, it has a beautifully intense colour, and a peculiar coppery hue when rubbed with a hard body; it is insipid, and insoluble in water, and is not acted upon by the dilute acids or common bleaching materials; but the alkalis immediately decompose it, and forming ferrocyanides, throw down peroxide of iron.

The ferrocyanide of potassium is in great request in the laboratory, as a test of the presence of iron, and also of some other metals: thus, it throws down manganese, zinc, lead, mercury, and silver, *white;* copper and uranium, of a rich *brown;* these precipitates being ferrocyanides of the respective metals. But the great consumption of this salt is by the calico-printers and dyers; thus, in calico-printing, the pattern is printed in the iron-mordant, such as acetate of iron; and when this is subjected to an acidulated solution of ferrocyanide of potassium, the device appears in bright blue, the intensity of which may be modified according to the strength of the iron-mordant used: if a copper-mordant be employed, a brown pattern is the result. Attempts have been made, and with tolerable success, to substitute this mode of dying wool, for that by indigo, compared with which, however, it has many disadvantages.

In these lectures, many temptations occur to deviate from the plan I proposed, of giving you facts and principles, rather than their applications; and, on the present occasion, I must so far transgress in this matter as to endeavour to shew you some of the practical details of the calico-printer, whose beautiful art is not only strictly and essentially chemical, but is even founded upon very curious, delicate, and complicated chemical principles: it is, indeed, not less connected in some of its details with great refinements of mechanism, and receives the aid of the fine arts; but as the mechanical arrangements and manipulations of the print-works have lately been before you in Mr. Cowper's course of lectures, and as he has also pointed out to you the curious importance and influence of the pattern-drawer, as an officer of the calico-printer's establishment, I shall limit myself to a few chemical details, reminding you that calico-printing is a topical dyeing, as it were, dependent upon the same principles, though infinitely complicated by the multiplicity of colours often required to be produced, and by the occasional blending of the operations of the bleacher.

[Mr. Brande here exhibited the blocks, copper-plates, and cylinders employed in applying the mordants, and gave a short outline of the mode of drawing, cutting, engraving, and voltatyping the patterns.]

As far as *colouring matters* are concerned, they are extremely various, and derived from many sources, of which I will endeavour to give you some account before we part. Many of these are derived from organic compounds of the metals; many are purely of vegetable origin; some are derived from the animal kingdom; but there are scarcely any which are capable of permanently colouring any fabric without the intervention of other substances, by which they are not only fixed and rendered durable, but by which their tints are also often exalted and modified. Here, for instance, I have a deep red liquid—it is a decoction of peach-wood; here another, which is yellow—it is a decoction of quercitron bark: but if I print a pattern upon a piece of calendered calico with either of these, though it appears bright and brilliant enough at first, it very soon fades; and if I wash it, especially with the aid of a little soap and warm water, I have no difficulty in entirely obliterating all my work: now, to exalt these tints, to render them permanent so as to resist the bleaching agency of light, and the cleansing efforts of the laundress, and to do all this without injuring the fabric, constitutes the chemical problem which the skilful calico-printer has to solve, and it is no very easy one: the theory of the matter amounts to this,—I seek for a substance which has a joint affinity for the dye-stuff, or colouring material, and for the fabric to be coloured; I then prepare the fabric for the reception of the colour, by the previous application of this substance, which is called a *base* or *mordant*, and when the colouring matter is subsequently applied it becomes, in consequence of the joint chemical affinity which I have explained, more or less permanently fixed, and often modified in tint, or is even actually produced at the time.

Let us now, by way of illustrating these matters, operate upon this piece of calico. I print a pattern upon it by an engraved wood-block, with a solution of peracetate of iron thickened with gum; now, the affinity of the lignin, or fibre of the calico, for oxide of iron, is such, that on drying by a gentle heat, the acetic acid actually flies off, and leaves the metallic oxide in permanent combination with the fibre, so that no washing can disturb it: of all this you have a familiar example in what is called an *iron mould*. Now, many buffs and browns are thus printed; but suppose I wish the pattern in *blue*, I merely draw the mordanted calico through a weak acidulated solution of prussiate of potash, and out it comes. But suppose I want my pattern in *brown*, then, instead of using the iron, I use a copper mordant, and, upon the principle you have already seen, of course it comes out printed in brown. Or to proceed to a more complicated case,—here I have a piece of calico which has been printed from two blocks, the spots in iron, and the sprigs in copper mordant; I draw it through my prussic bath, and now the spots are all blue, and the sprigs all brown. [These and similar effects, with other patterns, were here exhibited.] I have selected these as simple and striking illustrations of our subject, speedily attained, and well seen at a distance; but I must give you a few others.

Alumina is a substance admirably adapted to the purposes of this exquisite art. It has a strong affinity for woody fibre or calico, and an equally strong inclination to combine with a great variety of vegetable colouring principles; of this I will give you a preliminary instance or two. If I steep a piece of clean calico into this solution of *acetate of alumina*, and dry it before the fire, I find exactly the same result as with the acetate of iron; the acetic acid has evaporated, and the alumina is in permanent combination with the fibre, only being colourless, it cannot, like the oxide of iron, be seen; however, I may wash the calico as much as I please, but I cannot wash out the alumina, any more than I could the iron-mould. Here again I have a solution of alum, to which I add ammonia, and you observe a bulky white precipitate, which is pure alumina; but now, if instead of dissolving the alum in water, I dissolve it in the red or yellow dye stuff liquors, and then throw down the alumina by ammonia, it will not fall white as it did before, but will carry down with it all the colouring matter, so that I get a red and a yellow precipitate; and to show how perfect this action is, and how strong the affinity between the colouring matters and the alumina, you observe that the liquid above the precipitate is not only perfectly clear, but perfectly colourless. Now then I have here a piece of calico, upon which a running pattern of flowers has been printed in an aluminous mordant; nothing is visible, but if I put it into the warm red or yellow colour-bath, the pattern immediately becomes visible, and indeed in bright red in the one case, and yellow in the other, and this pattern is now permanent, for it will resist bleaching and washing. [Mr. Brande here exhibited a variety of results, in which different colours and patterns were pro-

duced.] You will now see that by using different mordants and different colouring materials, a great variety of tints and colours may be obtained, and although the goods often come out of the colouring baths apparently dyed all over, washing and bleaching soon dismiss the colour from all places which have not received the mordant, and the grounds are thus easily rendered quite white. I might multiply these illustrations through several lectures, and shew you processes infinitely more refined and complicated, by which various patterns and colours are produced, but our time will not admit this, and I must, therefore, rest satisfied with having explained the principles of this art by some of the simplest parts of its practice, and with referring you to the beautiful illustrations and specimens of the more complicated details of it, which abound in the shop-windows of Regent Street.

We must now, then, pass on to other proximate principles; one of these, also largely concerned in the art we have just considered, is the astringent, or tanning principle, which when separated in its pure state, is called *tannin*. Its presence is recognised by its astringency--by the abundant insoluble precipitate which it occasions in solutions of animal jelly, and by the black or dark cloud which it occasions in solutions of iron. We resort to gall-nuts as the best source of pure tannin: they are bruised and digested in washed ether, which being poured off separates into two layers, the denser of which yields tannin on evaporation. Tannin combines with bases, and its equivalent derived from such compounds is about 426—its formula thence calculated being C_{36}, H_{18}, O_{24}.

There are two important applications of tannin; one of these has already been alluded to in reference to the manufacture of leather, and depends upon the mutual affinity which exists between tannin and gelatine, the gelatine of the skin or hide combining with the tannin of oak bark, or other astringent material; the other important use of tannin depends upon the black colour of its compound with peroxide of iron. Black dyes are thus constituted, and the same compound is the basis of writing ink. The details of the application of this compound to dyeing and calico-printing, will be obvious from the illustrations already before you: if I dip this piece of calico, upon which a pattern has been printed in iron mordant, into an acidulated decoction of galls, I bring it out in black; if I use other astringent liquids, such as infusion of catechu, or of walnut-husks, I get other tints, including greys and drabs. Now, as to writing-ink, there have been many recipes given, but after all the simplest is the best, and I can recommend this as a very good one. Take 6 ounces of bruised Aleppo galls, and boil them for a few minutes in a gallon (10 pounds) of rain or distilled water; then add 4 ounces of gum arabic, and 4 ounces of common green vitriol, or protosulphate of iron, and when these are dissolved, put the whole into a stone bottle, corked up, and shaken once a day; in six weeks the ink may be strained off into half-pint bottles, to each of which a drop or two of creasote may be added, to prevent moulding; they should always be well corked, and when the ink-stand is filled from them the sediment, if considerable, should not be shaken up. In this valuable compound the colour is derived from the tanno-gallate of iron, which is suspended in the gummy liquid; the creasote prevents moulding; a grain of corrosive sublimate, or a few cloves, may be substituted for it, if its odour is thought disagreeable. Sometimes, sulphate of copper, sugar, indigo, and other things are added to the ink, but they do not, I think, improve it. All the qualities of a good writing-ink are not easily combined; it ought to flow readily from the pen, to bite into the paper without in any way corroding it, to be permanent, and darken its tint by exposure; it should be free from sediment and tendency to decomposition and mouldiness. It is true, that, from the nature of the colouring matter, the best ink will under certain circumstances fade and perish; but in such cases the oxide of iron remains in the paper, and the characters may again be made legible by washing them completely over with infusion of galls, acidulated by a little muriatic acid. The impurities in writing paper often do much mischief to the colour and durability of the ink. Permanency may, to a certain extent, be conferred on ink, by the addition of carbon, or, what amounts to the same thing, by dissolving a stick of Indian ink in each bottle of the common ink; but then it becomes more liable to sediment.

A variety of schemes have been proposed to prevent the possibility of removing writing-ink, by chlorine, and oxalic, and other acids, which are sometimes fraudulently resorted to for such purposes; but the history of these would lead me into details respecting the manufacture of paper, and other matters connected with the prevention of forgery, which we have not time for.

I must now give you a short account of some colouring matters perfectly distinct from the foregoing, and the history of which involves some very curious and complicated subjects of enquiry. There are substances contained in some lichens, which, under the influence of certain chemical agents, are convertible into colouring matters. I will take the *variolaria dealbata* and the *rocella tinctoria* as instances. By digesing the variolaria in alcohol, a colourless crystallisable substance is obtained, which is called *orcine*, the formula of which is, C_{18}, H_9, O^5. When this is exposed to the joint action of air and ammonia, it becomes of a deep crimson colour, being converted into *orcein*, having the composition C_{18}, H_{10}, O^8, N: this constitutes the colouring principle of the *archil* of commerce; it yields a fine purple with alkalis. In the rocella, there is an analogous principle, which, though differing from orcine, yields orcein by the action of oxygen and ammonia. By the further action of air it yields a red powder, which, according to the elaborate researches of Kane, constitutes the colouring principle of *litmus*; its formula being C_{18}, H_{10}, O_{10}, N. In the manufacture of archil and litmus, the lichens are ground up and mixed with any ammoniacal liquors; purple solutions are thus obtained, which are mixed with chalk or plaster of Paris, formed into small cubical pieces, and dried.

Another highly important colour is indigo; it is obtained from several species of indigofera, and also from other plants, the leaves of which yield, when fermented with water, a yellow liquor, which exposed to air gradually becomes blue, and deposits indigo. The indigo of commerce contains several foreign matters, from which, in consequence of the insolubility of pure indigo in alcohol, and in dilute acids and alkalis, it may be freed. When pure it is a rich blue powder, which assumes a metallic lustre when rubbed, and which, when heated, produces a dense purple vapour, which condenses in small and brilliant prismatic crystals of a peculiar purple and metallic lustre. The formula of indigo is C_{16}, H^5, O^2, N.

A remarkable property of indigo, and one upon which some of its applications in calico-printing and dyeing depends, is that by the action of certain deoxidising agents it becomes soluble in alkalis, and when thrown down from such solutions by the acids, provided all access of oxygen be carefully excluded, it appears in the form of a white precipitate, which very speedily becomes blue on exposure to air or oxidising agents. To indigo in this state the terms *indigogene* and *deoxidised indigo*, have been applied; but if Dumas' analysis be correct, white indigo is a hydruret of blue indigo; for, according to that high authority in organic chemistry, the formula of blue indigo being as I have just represented it, that of white indigo is C_{16}, H^5, O_2, $N + H$, or C_{16}, H^6, O^2, N, so that in its formation, water is decomposed, the hydrogen of which is transferred to the indigo, the oxygen being abstracted by the deoxidising agent. The best way of getting this white indigo is to mix 2 parts of protosulphate of iron, 2 of common indigo, and 3 of slaked lime, with 50 of water, in a well-stopped vessel, frequently shaken, for 24 hours; the insoluble matters subside, and a clear yellow solution is obtained, which, even upon momentary exposure, acquires a blue film and deposits blue indigo; to get the white precipitate of indigogene, it must be dealt with in an atmosphere of hydrogen.

[Mr. Brande here shewed the mode of throwing down the white indigo, and referred to a tabular view of the theory of its changes, founded upon the researches of Dumas and of Liebig.)

Indigo is soluble in sulphuric acid, and in this state is used for dying wool; it is called Saxon blue. Nitric acid converts it first into indigotic and then into carbazotic acid; but having stated to you the composition, and shewn some of the leading properties of this substance, I must not go further into other details of its chemical history, which is extremely voluminous, and beset with so many instances of the abominations of modern nomenclature, as to render it in that respect alone unadapted to this course.

Another important colouring matter is that of *madder*, which is the prepared root of the *rubia tinctorum*; its value depends upon the presence of a crystallisable principle, called *alezarine*, besides which it contains four other colouring matters,—a purple, brown, orange, and yellow; when madder is used as a red dye-stuff, these latter are separated by a complex series of processes, and then durable and brilliant red and reddish-pink colours are obtained, one of which is known in trade as *Turkey red*.

[Mr. Brande here referred to a table shewing the composition of a variety of colouring matters, and mentioned the properties of the colours of petals of flowers, some of which, he said, had been successfully applied by Sir John Herschel to the purposes of photogenic drawing. He also shewed the uses of coloured test papers—and the influence of the salts of tin and tartar on the colouring matter of lac and cochineal in reference to the production of scarlet dyes.]

I must now take leave of this extensive and difficult branch of our subject, with a few remarks upon the source of the universal *green* which adorns the face of nature, and renders it so agreeable and soothing to the eye, and which, at the same time, possesses peculiar relations to the solar rays, upon which some of the most important vital functions of plants depend. All the green parts of vegetables contain a peculiar colouring matter, which, when freed as far as possible from other substances, has been called *chlorophyll*. It is an extremely diffusible, or extensible, colour, for it would appear from the experiments of Berzelius, that eight or ten grains include the whole which can be obtained from a large tree. I have here an alcoholic solution of it; it is insoluble in water, soluble in certain acids, and combines with alumina and other bases, forming green compounds or lakes, analogous to those I have already shewn you. The colours of flowers and plants generally, are probably derived from some modification of chlorophyll, for in those leaves which acquire, previous to their falling off, a deep red or scarlet tint, the green colour is restored by alkalis, and the red reproduced by acids; and this, which appears to be oxidised chlorophyll, has now less of the resinous, and more of the extractive characters. And, lastly, in what we call dead leaves, and in those which, previous to their falling off, acquire yellow and brown tints, the chlorophyll has given place to a colouring matter, which, according to Berzelius, is of an oily, waxy character.

Microscopic Plants discovered in Normal or Pathological Albuminous Fluids.—Messrs. Andral and Gavaret, in the course of their researches upon the blood, have discovered the curious fact, that if the alkalinescence of its serum be neutralized by an acid, rounded corpuscles are developed in the midst of the fluid, which are no other than the first rudiments of a plant, having the greatest analogy to the one, the presence of which, was pointed out by Mr. Turpin in certain fluids after fermentation. They have found the same plant in the white of egg, in different serums produced by disease, and in the serous part of pus.

Gleets.—M. Eugène Marchand, of Fécamp, advises the internal administration of lead in the form of acetate combined with morphia, in the treatment of obstinate gleet. He says he has found it very serviceable. He is also of opinion that the chloruret of silver in pills may be found useful in such cases.

ON THE LAWS OF THE DEVELOPMENT OF ORGANS; OR TRANSCENDENTAL ANATOMY APPLIED TO PHYSIOLOGY.

By E. R. A. SERRES, Member of the Institute of the Academy of Medicine, Professor to the Museum of Natural History, Paris, &c., &c,, &c.

SUMMARY.—*Formation of single organisms—Formation of the openings of organisms—Formation of the cavities of organisms—Formation of the canals—Conclusion.*

ALL the single organs occupy the central part of the organisms, and all, as we have seen, are primitively composed of two equal halves, separated one from the other by a certain space. Suppose that in their development these organisms should be immovable, then would they evidently remain as left by the law of symmetry; but suppose, on the contrary, that they should be endowed with their proper movement, that the two halves, progressing from without inwards, become directed one towards the other, the effect of this movement will evidently be to bring them into contact, and this point of contact attained, they will become associated and incorporated, so as to form but a single organ. Duality will be converted into unity.

If from principle we descend to facts, we shall see the two cords of the spinal marrow become united in front, then behind; this double association being repeated in reference to the two halves of the brain, we have produced the cerebro-spinal axis; and around this we find the two halves of the spinal column and of the cranium undergoing the same movement, and thus forming a large canal in which the central portion of the nervous system rests. By tracing this movement we see the vertebral laminæ, the great alæ of the sphenoid, the temporal, the parietal, and the frontal bones, become united behind and above; while, by the bodies of the vertebræ, as well as those of the ethmoid and sphenoid bones, undergoing a similar incorporation in front and below, we find produced a large osseous case, which encircles the cerebro-spinal axis. We have, when the developments are finally accomplished, but one vertebral column and one cranium, as but one spinal marrow and one brain. This is not all, for we see also the two halves of the corpora callosa, the two halves of the septum lucidum, the two halves of the cerebellum, of the valve of Vieussens and of the cerebral commissures, become single; the two perpendicular plates of the ethmoid bone, the two vomers, the two lower maxillæ, the two ossa hyoides, &c. form each but single bones. So with the sternum, the two halves of which become joined over the heart, serving it as a kind of breast-plate:—with the abdominal parietes, which circumscribe the intestines—and with the bones of the pelvis, which enclose the uterus, the bladder and the rectum. All these parts, which were originally double, become single, and this results in all from precisely the same kind of mechanism.

The law of duality which produces the organs in pairs being of such universal application, we may conceive that that of unity, which produces the single organs, is equally general. Thus the two intestinal layers produce a single intestine; the two cardiac vessels become united into one organ; so also with the two diaphragms, the two livers, the two halves of the pancreas, the two urethral layers, the two prostates, the two uteri, the two penes; lastly, the two aortæ, the two superior and the two inferior venæ cavæ, the two spinal arteries, &c., become converted each into single vessels. Organic unity is produced on all sides from primitive duality; and from this unity of formation results that similitude of composition found in single organs, so that on supposing them divided by a median line, the one side will offer an exact repetition of the other.

The organisms of animals are enclosed the one within the other; they are some of them containing and others contained, and there should be a means of communication between them. To render this communication perfectly free, it is necessary that there should be openings: how then are these openings formed? This question, so opposed to the system of pre-existences, according to which every thing was supposed to be pre-formed, becomes important in the theory of epigenesis, from which all pre-formations are rejected. Now, there is nothing more simple than the explanation of this mechanism. We find upon the sides of the vertebral column a series of holes, equal in number to that of the vertebræ, for the purpose of allowing a passage to the nerves, veins, and arteries, in or out of the vertebral canal. These holes are formed in the following manner:—upon the sides of the body of each vertebra exists a groove or depression; on the approximation of the two vertebræ, the depression of the upper bone being applied over that of the lower one, the two united form an opening, or *conjugated* hole, as it is called, from its being produced by the conjugation of the two vertebræ. This simple mechanism is that which nature adopts in the formation of all the openings and foramina of the human body, as well as in those of animals. Wherever there exists an opening, whether in the muscular, the nervous, the fibrous, or the osseous system, we always find it produced by the conjugation of two or more parts of these various organic systems. We shall not stay to detail more particularly the mechanism exhibited in the formation of the different foramina of the osseous system. Enough has been already said to render this subject intelligible. Some difference is, however, observable in respect to the other organic systems, especially the muscular. The contractility of this system is so active that, supposing the existence of circular fibres, the dimensions of the openings would be constantly varying with every movement of the muscle, a circumstance which would interfere materially with the freedom of action of the parts which traverse them. If, on the contrary, there existed a distinct muscular fasciculus for each side of the opening, we may conceive that their separate contraction would enlarge rather than diminish the hole which they would form by their re-union; we may also imagine that where these foramina might exist in muscles under the influence of the will, the combination of their individual contractions would, of necessity, vary the size of the orifice. For these reasons, not only are all the openings in the muscular system conjugated openings like those of the osseous system, but frequently the fibrous system is combined with the muscular, so as to line the edges of the orifice. Thus the fibrous ring of the diaphragm which surrounds the vena cava, is produced by the junction upon the median line of the two halves of this muscle; the œsophagean opening and the aortic ring result from the decussation of its anterior and posterior crura; and, in like manner, the inguinal ring is derived from the simple decussation of the two fasciculi of the abdominal muscles. The base of the crural arch is formed by the bone of the pubis, and its upper border by the fibrous arch of the obliqui and transversalis abdominis. So also with the axillary arch, which gives passage to the vessels of the thorax, as well as with the openings traversed by the inter-costal, the obturator arteries, &c. Nowhere is this binary composition of the muscular rings more marked than at the mouth, the vulva, the anus, and the eye-lids. There are four labial muscles, two superior, and two inferior, to form the entrance to the digestive canal; there are double muscular sphincters to constitute its terminal ring; there are two muscular arches united above and below to form the entrance of the vagina; lastly, the upper half of the ring of the orbicular muscles of the eye-lids is formed by one muscle, and the lower half by another; the angle of their junction forms the commissures. It was perhaps in consequence of this binary composition that the ancients have given to the junction of the commissures of the brain in the mammifera those unfit and misplaced names of *vulva* and *anus*. The *fissures*, the *grooves*, and the *slits*, being merely openings which are more or less prolonged, it will be unnecessary to say anything further upon the constant law of their formation.

According to the system of pre-existences, all the cavities, being formed before-hand, are subsequently dilated. But in the theory of epigenesis, all these cavities are formed by the junction or incorporation of the various parts, which, by their re-union, constitute the parietes. Strictly speaking, these cavities are merely internal holes, so that the structure of the one should, by taking observation as our guide, serve to explain that of the other. This course is so much the more necessary as different modes of formation have been assigned by anatomists to different cavities; it is then of importance to establish by facts that the mechanism of their development is the same in all, whatever may be the diversity of the organs which they occupy, or the diversity of the tissues concurring to their formation. We state nothing new, when we say that the cavities of the cranium, of the orbit, of the nasal fossæ, &c., result from the concourse of several pieces of bone, united together so as to constitute the arches which they present. This composition is so evident that no doubt can be felt on the subject. Not so, however, when we come to consider the articular cavities of bones. These cavities are so various, so diversified, that there appears, at first sight, to be no similitude of formation between them. The difference between the cotyloid cavity, which is of sufficient depth to enclose the head of the femur, and the superficial depression upon the atlas for the purpose of favouring the gliding of the odontoid process of the axis, is so striking that no relation appears to exist between them. All the articular cavities, however, require at least two distinct bony portions for their composition. The cotyloid cavity has three described by all anatomists, while a fourth (the *cotyloidal*) has been discovered in the mammifera. The glenoid cavity of the scapula is invariably composed of two pieces in man, frequently of three in the mammifera. Each vertebral body has its half articular surface to form with the adjoining one the cavity which receives the head of the rib. The two osseous nuclei of the body of the atlas become united to form the odontoid cavity. In fine, even the cavity of the *incus* is owing to the union of the two primitive pieces which enter into the composition of this little bone of the ear. This law of formation is then general. But this is not all. The receiving cavities are often divided into distinct cells; these cells being produced by partitions or processes, which are sent off from the internal parietes of the cavity. Thus the cavity of the cranium is divided into two distinct portions by the tentorium cerebelli, which is fibrous in man, but bony in some of the mammifera. The olfactory cavity is divided into two by the partition formed by the perpendicular plate of the ethmoid bone and the vomer, and further subdivided by the turbinated or spongy bones. The alveolar portion of the maxillæ, in which are enclosed the germs of the teeth, is divided into a multitude of little cavities by means of small processes of bone which are detached from its parietes. The division of the cavities in general is then produced by the internal conjugation of their parietes. This law of organogeny, so evident in the formation of the osseous cavities, is equally visible in the division of the cavities of the brain and of the heart. The importance of these latter organs in reference to their functions, gives a peculiar interest to this process of development. There is doubtless a great difference between the importance of the cavities of the heart or of the brain and that of the olfactory or alveolar cavities; but if we merely view the mechanism by which they are produced, we shall find it exactly the same in all. Thus the cavity of the fourth ventricle is produced by the conjugation of the layers of the cerebellum; the cavity between the optic lobes or the third ventricle, results from the re-union of their layers; and the aqueduct which establishes a communication between these two cavities is produced by the junction and extension of the two cord-like processes of the valve of Vieussens. The great or lateral ventricles of the brain result from a folding or doubling over of the layers of the hemisphere, connected together superiorly and laterally by the corpus callosum, inferiorly by the fornix, and internally by the septum lucidum. The ancients, as we know, considered the communication between these cavities to be formed for the purpose of facilitating the free circulation of the animal spirits. But although these views are no longer received in physiology, the blood, which the ancients considered immovable, circulates, and the uninterrupted continuance of its movement, on which life depends, adds greatly to the interest of

the formation of the cavities of the heart. We have already said that the two cardiac vessels becoming united form a single cavity ; this cavity is in the first place divided by a transverse partition which separates the auricles from the ventricles ; then from the summit of these latter arises a muscular partition which subdivides the ventricular cavity into two ; and lastly, from the inner wall of the auricle two demi-partitions are sent off, which progressing one towards another subdivide it in the same way that the preceding partition has subdivided the ventricle. The cavities of the heart, like those of the brain, are then merely cavities of conjugation.

The law of conjugation thus performs, for the structure and composition of the organisms, the same office that the preceding laws have accomplished in reference to their form. We may remark that the heart is an organ with open cavities. Now, by having reduced to a fixed rule the formation of these openings and cavities, after determining the nature of the tissues which compose them, we have explained the physical conditions of this organ. And this in some measure prepares us for the still more difficult explanation of the composition of the globe of the eye, which results from a succession of numerous closed cavities contained the one within the other. This organ, perhaps of all others, appears to favour the supposition of organic pre-formations, and would seem in an especial manner to be withdrawn from the application of the general rules of organogeny ; yet the primitive division of the globe of the eye has been placed beyond all doubt by M. Huschké. The eye is, in fact, primitively divided into two parts by an antero-posterior fissure ; and it is from the re-union of these two parts that the spherical form of the sclerotic and choroid membranes results; to the same mechanism is likewise owing the circular shape of the iris. In like manner, the two halves of the sclerotica and of the choroid, at their point of union behind, give rise to an opening which is traversed by the optic nerve ; in front, they develope a similar ring constituting the pupil of the iris, and the anterior opening of the sclerotica, closed by the transparent cornea, which, in its turn, according to the same anatomist, is developed by halves also. The two chambers of the eye are evidently produced by the moveable partition of the iris; the cells of the hyaloid membrane, containing the vitreous humour, appear to be owing to partitions which become joined the one with the other. Lastly, the divided formation of the crystalline lens, which in the aggregation of its granules resembles the polyedric form of the cellular tissue of plants (Reisch, Valentin), as well as the divided formation of its fibres which proceed from these granules, and which being at first more visible at the periphery approach nearer and nearer to the centre, all announce that the so complex formation of the globe of the eye is subject to the laws of development common to other organs.

The canals being in some measure but prolonged cavities, the mechanism of their formation is exactly the same as that of the latter ; they are invariably the product of the conjugation of two or more parts. But their reunion may be accomplished in two very distinct ways: it may take place by simple association or apposition, or it may be the result of incorporation.

In canals by association, the parts are joined together by sutures, an instance of which may be found in the bones of the cranium. We also have examples of this kind of union in the formation of the canal of the spinal marrow, in that of the intestinal canal and in the passage of the urethra. More striking examples still may be found in the infra-orbital, the posterior palatine and the pterygoid canals, in the inferior dental canal, and in the labyrinth of the internal ear, which shows itself at first under the appearance of an uniform canal twisted several times upon itself; at one of its extremities we have developed by conjugation the three semi-circular canals, in the formation of which several osseous pieces are concerned ; while at the internal ear appears the cochlea, the mechanism of which reproduces that of the semi-circular canals. The internal ear is then an assemblage of canals, which are the product of the association of different parts.

In the canals developed by incorporation, the union is still more intimate. Here we have two hollow parts brought into contact, when that portion of the parietes by which they are joined becomes effaced, or disappears, and from the two cavities a canal is formed. Such is the case with the central canal of the long bones of the animal skeleton, as well as with the blood vessels. The formation of the central canal of the long bones taking place in the fœtus during the early stages of ossification, the microscope becomes necessary for unfolding this mechanism; but with its aid we may plainly see that the little bony canals which replace the cartilaginous tissue proceed, while becoming developed and augmented in calibre, from the circumference towards the centre of the bone ; reaching this point, we find at one period the medullary canal represented by two little central canals larger than the others, which, being drawn one towards the other, become incorporated, their two cavities being united into one, and thus producing the single medullary canal of the long bones, limited, by reason of this mechanism of formation, to their median part. If we consider that the entire osseous system is composed of small canals, and that the kidneys as well as the testicles are also an agglomeration of little tubes, we may conceive the importance which these laws of organogeny acquire in proportion as we penetrate more deeply into the intimate structure of the parts. Sometimes even, as is especially the case with the primitive sanguineous system, we see the mechanism of the function, which in this instance is the circulation of the blood, acquire a new degree of certitude from the laws of which we have been speaking.

Such are the laws which constitute the theory of epigenesis. They appear to us to fill with advantage the place of those inadmissable suppositions of the system of pre-existences. These laws are in fact but an interpretation of those gradual movements, which, in human and comparative organogeny, bear the organisms one towards another by directing them from without inwards, in conformity with the centripetal law of formations. They as it were define the different stages which the organs traverse in the course of their developments. It is in some measure a realization, by nature, of the laws of analysis and synthesis. The law of symmetry, which has shown us the primitive duality of all organisms, is strictly speaking, but a law of analysis. The law of conjugation, which reduces this duality to unity, which by its consequences gives birth to the single organs, to the holes, the cavities, and the canals which are developed in the organisms, is, in truth, but a law of synthesis. Lastly, the law of equilibration, which from their primitive exaggeration reduces all the organs, by a uniform system of *balancement*, to the respective volume which they ought to possess, is, in like manner, but a law of subordination of the organisms in respect to one another.

The laws of normal organogeny being thus defined, we have merely to ascertain those of anormal organogeny, whether it be that the organisms, becoming arrested in their progress, do not attain the degree of perfection which characterises them, or that, having so attained it, they retrograde from the state which they had reached until they become deteriorated, or even destroyed. These researches, relating to *teratogeny* and to *pathogeny*, do not, however, belong to the subject which we have been considering.

Secale Cornutum.—M. Righini states, that this important medicine may be preserved for an indefinite time by placing it in a bottle, in alternate layers, with finely pulverized dry vegetable charcoal, so finely pressed down that no air can enter, the upper layer in the bottle being a thick one of charcoal. The bottle must be afterwards hermetically sealed, placed in a dry situation, and not exposed to too great a heat.

ON THE ACTIVE PRINCIPLE OF MALARIA.

By DANIEL P. GARDNER, M.D., Professor of Chemistry, &c., in Hampden Sidney College, Va. &c.

The subject will be discussed in the form of propositions, for the better classification of details. The profession are therefore made the judges in the matter, and their acceptance or rejection of the arguments brought forward, will substantiate or destroy the theory advocated in the following pages. The propositions, under which the facts adduced to show the nature of the active principle of malaria are classified, are—

1st. Sulphuretted hydrogen gas exists in the stagnant waters, and atmosphere of certain marshes.

2d. The character of malarious regions is similar to that of those in which sulphuretted hydrogen is generated.

3d. Certain agents have been supposed to give activity to the exhalations arising from marshes, called malaria.

4th. The properties of malaria are fully recognized by the profession.

5th Sulphuretted hydrogen is the active agent in the production of those forms of malarious fever met on the sea coast, and the diseases belonging to the same class found inland.

Proposition I.

Sulphuretted hydrogen gas exists in the stagnant waters, and atmosphere of certain marshes.

1. Numerous conjectures have been made concerning the cause of malaria. Nearly every agent, from carbonic acid to certain theoretical germs, have been brought forward as the deleterious matter. Amongst these, sulphuretted hydrogen has occupied a prominent position. But all attempts to demonstrate its existence had failed, until Professor Daniel, in 1841, succeeded in detecting large quantities of the gas in some specimens of water, submitted to his notice by the British admiralty for analysis. These specimens were from the African rivers Bonny, Sierra Leone, Mooney, Congo, and the adjacent seas. Mr. Garden, of London, also found the same gas in water from the Bonny and Lagos. Dr. Marcet, in the Yellow seas. All these localities are reputed for their insalubrity, and it was natural to attribute to the gas some share in producing it.

2. But it is not only on the pestiferous shores of Africa that malaria exists Practitioners in the United States have designated numerous localities which are remarkable for the peculiar diseases attributed to malaria. It becomes therefore an interesting question to ascertain whether sulphuretted hydrogen exists in all these places. The labour of one individual is not competent to the task, but it may become the lot of one to direct the attention of the profession, and put into their hands the means of deciding this much vexed and important question.

3. The difficulty, which has been found insuperable, in testing for this gas, is the extremely small quantity in which it exists in the air. A sufficient bulk of atmospheric air could not be submitted to examination to detect its presence. But instead of securing specimens from marshes, it appears extraordinary, that until very lately, the air or at least the stagnant water had not been examined on the spot. With a view of effecting this examination, I considered how an apparatus might be constructed to allow large volumes of gas to pass constantly across some reagent calculated to detect sulphur. The fruit of my labours was unsatisfactory, and I was reduced to the necessity of bringing the reagent simply in contact with the air, and water, without being able to increase the quantities of the former coming directly across it. The substance best calculated to answer all the necessary indications is silver, which when properly prepared is an exceedingly delicate test for sulphur, and not liable to be attacked by the many agents which act upon lead, copper, &c.

4. The silver must present a pure surface. To effect this, it should be kept in contact with a boiling solution of caustic potash and alum. The process must be continued through one or two changes of the solution, if the metal be very unclean. The last should be evaporated to dry-

ness, for by this means the potash is made to act upon any copper that may be present as an adulteration. When the process has been successful, the silver presents a granulated surface of a dull lustre, and immaculate purity. The coins in circulation are beautifully cleaned by this method, and become as good reagents as any other pieces of silver. They were used in the experiments instituted by myself.

5. The delicacy of pure silver as a test for sulphuretted hydrogen is exceedingly great. A solution was made containing one drop of hydrosulphate of ammonia in 120,000 grs. of water. A five cent piece placed in it was discoloured in the course of a few minutes, and became of a decided light yellowish brown color in two hours, without agitation. This is by no means the minimum which it will detect. The amount of sulphur present in the solution was determined by precipitating the whole of that substance out of a known quantity of the hydrosulphate by means of the nitrate of lead, collecting the precipitate, washing, drying and weighing it; allowing the ingredients of the sulphuret of lead to be in the ratio of their equivalents, or as 104 to 16.1, the quantity of sulphur present in a drop was found to be 1-25th of a grain. So that metallic silver, perfectly pure, is able to detect sulphur in a solution containing one part in three millions of water. As a means of determining the amount of sulphuretted hydrogen in mineral waters it is without comparison the best test, for all the addition to the weight of the silver is pure sulphur, and the metal is not acted upon by carbonic acid, which is nearly always present, and difficult to separate from the sulphuretted hydrogen.

6. Having learnt the delicacy of silver, it appeared to me, that by long exposure to the action of the water, and air of marshes, it might become stained by sulphuretted hydrogen, if that gas existed in such places. Accordingly, a number of prepared coin were disposed in suitable positions for its detection. Three small rivers, Buffalo, Briery, and Appomattox were selected, and coins suspended in them by a stout silk thread passed through a perforation made in them before cleaning; the stagnant water lying upon the surface of marshes, and produced by sluggish springs, was also tested in the same way, not allowing the metal to touch the soil, but suspending from the branches of shrubs. The currents which set out from cold springs, and which are known in the country as spring branches, were also examined in the same way at different points from their origin. In the air, over rivers, and marshes, coins were exposed. The description of money used was various, five cents, ten cents, twelve and a half cents, and twenty-five cent pieces were all taken, according to the change in my possession. They were first perforated in a marked place, so as to be recognised, next cleaned and dried, then carefully weighed, furnished with a string, and lastly carried to the place selected. Great care was taken to keep the surface unsullied by the touch of the finger or otherwise, The number of pieces used was thirty, and all the suspected places within a circle whose diameter is seven miles were examined.

7. In twenty-two hours after the first set of these coins were deposited, two were found distinctly stained, one in a marsh, and the other in a spring branch flowing through a marshy piece of land, and receiving constant additions of stagnant water from it. Two other coins immersed for the same time in the Buffalo river exhibited no sign of change. This great difference is worthy of remark, and points out the locality wherein the gas is generated. It was found to be a law, from repeated examination, that the shallow waters of marshes contained the most, and rivers the least amount of gas; the coins placed in the latter sometimes required a month, and those suspended in air even more time for discoloration. In all the experiments I made, the silver was ultimately stained.

8. The discovery of sulphuretted hydrogen in the air, is a new and important feature of these researches. In one coin placed over the Buffalo river it required five weeks to produce the sulphuret stain, but a quarter of a dollar suspended eighteen inches from the soil, in a marsh over stagnant spring water, was discoloured in a week. In every case where the gas was detected rapidly in water it was found in the air over it, in a greater or less time. This must necessarily be the case, for a solution of sulphuretted hydrogen exposed to the atmosphere must continually give off that gas, by exosmose, until the air and water contain equal quantities. Hence the gas abounds where it is generated, both in the air and water, and diminishes in quantity as the distance increases from the place of its production. That sulphuretted hydrogen exists in air must be admitted, when the discoloration of white lead paint in cities is considered; the houses painted with it in London, and Paris, become of a light dingy yellow in a few years. Plate, and other silver wares lose their polish and become tarnished in houses. These changes are undoubtedly due to sulphur existing in the atmosphere of such places.

9. That the discoloration observed in the coins was due to the formation of a sulphuret was proved directly by the reduction of the silver. Two pieces were selected, and weighed, after an exposure of ten days. They had both acquired 2-100ths of a grain access of weight, but as their diameters were not similar, the increase was not in the ration of their surfaces, but as 26 to 35. This was due to the difference of the places from which they had been taken, the one from a marsh, the other from a spring branch. The process adopted for the detection of sulphur on the coin, was by passing a stream of hydrogen gas, over the metal inclosed in a green glass tube, and made red hot; the effluent gas discoloured nitrate of silver in the manner of sulphuretted hydrogen.

10. Having proved that sulphur exists in these localities, my next object was to examine the causes of it. In the foregoing experiments, the immediate source was a marsh, containing much decaying vegetable matter, a rich alluvial soil saturated with *spring* water, or that which had percolated through the soil, and heated by the temperature of midsummer. These four conditions are all worthy of examination.

11. Alluvial deposits contain much vegetable matter, their blackness is due to it in some measure. This vegetable matter is in a constant state of decay, the rapidity of which is proportional to the access of oxygen, and the warmth of the season. Such accumulations are therefore interesting, as laboratories in which powerful affinities are bringing about numerous striking changes. They form the scene of many important events worthy of close attention. Let a sulphate be brought within the reach of these powerfully deoxidizing masses, and it will be decomposed by the destruction of the acid.

12. The second element, of the sites in which sulphuretted hydrogen was detected by me, is decaying vegetation. The effect of this, differs in no wise from the action of the organic constituents of alluvion. In its decay, carbon is left in excess, and exerts all its powerful affinities to assume the gaseous form. But vegetables contain certain inorganic constituents, which are of considerable interest in the changes under contemplation. Of these, the sulphates of lime, soda, potassa, and magnesia have been detected. In the decay of a plant containing any of these salts, the results will depend upon the presence or absence of water. If dry, they will be unchanged; but if water and heat be present, the sulphuric acid will be decomposed. The leaf contains a large proportion of the salts existing in a plant.

13. But of all the agents discovered in these localities, spring water is the most important. It is usually impure. It contains the soluble salts of the land through which it has percolated. These must from the nature of the case differ. Muriates, sulphates and carbonates have been found by different analysts. Spring water is seldom free from sulphate of lime, or magnesia—the former imparts to it the quality denominated hardness. When these ingredients are present in any quantity, and the water is kept in contact with decaying vegetable matter, they are decomposed, oxygen is abstracted and sulphurets are produced—the latter in their turn, yield sulphuretted hydrogen with the first nascent hydrogen they encounter. The final compound of these bases, is most probably a carbonate. That sulphuretted hydrogen is thus produced, is a matter of demonstration. Prof. Daniel put decaying leaves together with water containing sulphate of soda in a jar, and subjected them to the action of a summer's heat; in three months, sulphuretted hydrogen was abundantly given off, and the salts decomposed. If no sulphate be present, either in the vegetable matter or water, the gas will not be given off. Hence, to apply the result of this decisive experiment to our purpose, no locality, the soil of which is destitute of the sulphates, can generate the deleterious gas.

Thus we have reached a generalisation which is indisputable, and of the greatest practical importance. For it affords the means of discriminating, even in the most unpromising situations, between a healthy and insalubrious site.

To ascertain the presence of sulphates, the addition of a few drops of a solution of chloride of barium is all that is necessary. If the cloudy precipitate that falls is unsatisfactory, boil the spring water until it is evaporated to a small compass, and test again. If a sulphate be present, the white, dense sulphate of baryta will fall, a salt that cannot be mistaken from its utter insolubility. This test is so simple, that any member of the profession can decide upon the existence of sulphates, and therefore of sulphuretted hydrogen, in any place whatsoever. The test for the gas detailed in sections 4, 5, 6, is not less simple, and therefore, there are placed in his hands both the theoretical and experimental means of deciding on this grave question, at all times.

It is also a fact, no less valuable than the preceding, that the practitioner is enabled to decide, by analysis, the comparative amount of the deleterious gas in different situations. It is not extent of surface, depth of soil, geological structure, or the amount of evaporating water that concerns him, but the quantity of the sulphates. This point I have had the means of examining, during several years, in consequence of the analysis of many specimens of sulphur, and other mineral waters, from the counties of Prince Edward, Cumberland, Buckingham, Lunenburg, and Halifax in this state. Those waters, containing the greatest amount of the sulphates, yielded larger quantities of sulphuretted hydrogen than those which contained but little of these salts. All the specimens of sulphur water, examined by me, were from alluvial deposits. Two saline waters contained sulphate of magnesia and lime, but they were procured from rocky places, in which no vegetable matter existed. Three specimens were from alluvial situations, but contained no sulphates, and therefore no sulphuretted hydrogen gas. But few mineral waters, are as rich in sulphates as the ocean. Schweitzer found in 1000 grs. of water from the British Channel, 3.7 grs. of sulphate of lime, and magnesia. Laurens 7.17 grs. in the same bulk from the Mediterranean. Murray, in a wine pint, 21.6 grs. of sulphate of magnesia. Prof. Daniel, from 80 to 120 grs. of sulphuric acid in a gallon of the waters from the African coast. The sea stations are the most dangerous, when vegetable matters are present, as on alluvial coasts; but the open expanse of old ocean is without the least trace of malaria. Rivers before they become salt by contact with the ocean, contain less saline matters than marshes, in consequence of the showers of rain water which reach them without percolating the soil and dissolving out the sulphates incorporated in it.

14. The temperature must be warm, for the production of these changes in the sulphates. The amount of heat necessary to commence the decomposition is unknown, and can be determined only by experiment. It is known to be above the freezing point, for water is necessary. An elevated temperature is highly favorable, and the more elevated, as long as water remains, the more favorable it is for the production of the gas. This is an immediate consequence of chemical laws, and is further borne out by quantities of sulphuretted hydrogen discovered in the tropical waters of Africa and China. In the same proportion, the fatality of malarious diseases increases. Tempera-

ture is, therefore, an element in our researches not to be overlooked.

15. It is not to be understood, that because sulphates are found in certain waters, the gas must exist in them also—for it is not the presence of one condition, but of all, that produces the results under consideration. So sulphuretted hydrogen may be found in waters which contain no sulphates—this appears to be the case in the mineral waters of Aix la Chapelle analysed by Bergman; Moffat by Garnet, and Harrowgate in England. Such exceptions point out to our attention, the existence of other sources of the gas. It is believed that at Harrowgate the destruction of large quantities of pyrites yields it: the iron combining with oxygen gives up its sulphur to nascent hydrogen. Other minerals and districts may yield the gas without disparagement to the fact adduced. As far as my examinations in Virginia go, I believe that sulphuretted hydrogen is produced in springs by the process under examination. Dr. Amedée Foutan suggests the same process as yielding the gas in the waters of Germany, Belgium, Switzerland and Savoy.

16. Thus, having proved that sulphuretted hydrogen exists in the air, and water of marshes—having showed the usual sources of this substance, and the process by which it is eliminated—it remains to show that the localities which are remarkable for the production of malaria agree with those fitted to generate the gas. The circumstances under which sulphuretted hydrogen is most abundantly produced are—sufficient water not to dilute the gas, exposure of the soil to the air, high temperature, and abundant supplies of vegetable matter and soluble sulphates. Hence sea-marshes, the deltas of tropical rivers containing salt water, &c., exposed to certain states of drought, are the most prolific sources of *sulphuretted hydrogen* and *malaria*. Nor is the bilge water of ships, in contact with decaying wood, or other vegetable matter, to be overlooked.

PROPOSITION II.

The character of malarious regions is similar to that of those in which sulphuretted hydrogen is generated.

17. In a narrative of an expedition into the interior of Africa, along the river Niger, by Messrs. Laird and Oldfield, the following remarks occur. "The principal predisposing causes of the awful mortality, were, in my opinion, the sudden change from the open sea to narrow and winding river, the want of the sea-breeze, and the prevalence of the deadly miasma, to which we are nightly exposed from the surrounding swamps. The horrid sickening stench of the miasma must be experienced to be conceived." In water taken from this spot, Mr. Daniel found sulphuretted hydrogen. In some of the specimens there were 6.7 to 11 cubic inches of it in a gallon.

18. From the same narrative, it appears, that sickness attacked the vessel twenty-seven days before their entrance into the river Nun. In removing a part of the cargo, it was discovered that the cause of a "disagreeable vapour, from which they had long suffered, was, that the bags containing the cocoa had rolled, and the cocoa had fallen into the salt bilge water and there become putrid.

19. The following account is extracted from Dr. Barrington's paper. The Hornet had been "salted," and was consequently very damp. When she was "broken out" at New York, after her return in 1828, great quantities of mud and other filth were taken from her hold; and in her timbers and lower works was discovered a considerable collection of chips and shavings in a putrid state. The bilge water, and smell from the hold in this vessel were exceedingly unpleasant. On board this ship, yellow fever made its appearance whilst off Sacrificios, Mexico. The Peacock, which suffered also, was in much the same condition. The temperature averaged 84 deg. F. This writer states, that "by experiments made on shipboard, 17 grains of chloride of lime decomposed all the sulphuretted hydrogen in half a pint of bilge water." (*Am. Journ, Med. Sci.* Aug. 1833, p. 307, *et seq.*)

20. New Orleans "is built on a soft alluvial soil, but a few feet above the water in the wells, the dampness is consequently very great; the street are filthy." The attack of "Epidemic Yellow Fever of the autumn of 1833" is described by Dr. E. H. Barton. August—rain 8.17 inches; average thermometer 79.97 rising to 90 F., at midnight often 81 deg.—84 deg. "From the streets arose a very offensive odour." The streets were filthy and exhaled a peculiar offensive odour after rains. This writer quotes the tables of Philadelphia, and the authority of Sir G. Blane and M. Arejula, to prove that the fever does not occur at a lower temperature than 79 deg.—82 F.—(*Am. Journ. Med. Sci.* Nov. 1834.)

21. On the north side of Mobile, the land is wet and swampy, consisting of a soft black mud, apparently without any solid foundation." "Persons residing there throughout the year, will be liable to the different grades of bilious or endemic fever of either the intermitting, remitting, or continued type." The well water is warm and *brackish*. The coast bordering the bay is considered unhealthy—"the sea-breeze blows over a quantity of decaying drift wood, and other perishable matters." Spring Hill being entirely free from stagnant water is healthy." Dr. Heustis, from whom the above facts are taken, remarks "that a range of temperature from 70 to 80 deg. F. is necessary for the production of bilious endemic, or yellow fever—it should not fall below 70 deg. at night, or 86 deg. in the day."—(*Am. Journ. Med. Sci.* Nov. 1836.)

22. Dr. Lucas gives an admirable account of the topography, and diseases of Montgomery county, Alabama, in the *American Jour. of the Med. Sciences*, Nov. 1827, in which the same causes are pointed out as the producers of malaria, that are requisite for the evolution of sulphuretted hydrogen. Alluvial soil, vegetable decay, and high temperature are found in the most healthy parts.

Dr. Heustis introduces similar local causes to account for the autumnal remittent of Dallas county in the same state. (*Am. Journ. Med. Sci.* Feb. 1832.)

23. Charleston, South Carolina, has been visited by repeated attacks of yellow fever. One of 1827 is fully described by Prof. Dickson in the *American Journal of Med. Sciences*, May. 1828. The city stands on a neck of land between two marshy rivers, the commercial part is built on alluvial soil; some of which are "made," having been formerly covered by creeks which intersected it in every direction. The materials used for filling up low swampy lots, are principally pine logs, oyster-shells, and rubbish of all kinds, and even scavengers' offals. The wharves are of wood filled up with those materials, and with mud drawn from the river. You will readily infer that grounds thus *made* will be eminently fitted for generating, and giving off deleterious effluvia." The thermometer ranged from 82 to 90 deg. in August, in the sun it reached 120 deg.—125 deg,—130 deg.—130 F., and at 2 o'clock, A.M., with every door and window open, 86 deg. F. This writer, as well as Dr. Lucas, remarks that negroes escape often in the most unhealthy seasons.

Dr. Simmons, in a report on Yellow Fever, read in 1839, remarks,—"Stranger's fever requires a high temperature, ranging 85 deg. F.—it is accompanied with moisture. In the docks (of Charleston) a good deal of mud, with decomposed vegetable, and other materials are thrown up by the tide, and at low water, the exhalations are offensive. At present the city is surrounded by marshes through which the salt water ebbs and flows." (*Am. Journ. Med. Sci.* Feb. 1840, p. 409.)

24. Augusta, Georgia, was visited by a severe endemic in 1839. A report, drawn up by a committee of physicians, attributes it to the exhalations given off from about 117,000 to 200,000 cubic feet of decaying animal and vegetable matter collected at the trash way, and reposing on the bed of the river, above the surface of which it rose.—(*Am. Journ. Med. Sci.* Feb. 1840, p. 410.)

25. Dr. Hildreth, treating of the climate of Washington county, Ohio, remarks,—"In 1807, the alluvial low grounds near the river were inundated. In 1822, the water of the rivers and creeks was low, stagnant and putrid—the Ohio for two or three months resembled a long slimy lake." In 1823, the low grounds were deluged.—(*Am. Journ. Med. Sci.* Feb. 1830.)

26. Batavia, the storehouse of pestilence, is thus described by Dr. Bettner. The islands in front of the harbour (used as cemeteries) obstruct the free passage of the sea-breeze, and contribute to the stillness of the water in the roads, which sometimes appears thick and partly stagnant, "imparting an unpleasant and unwholesome odour."—"This atmosphere receives still further contributions from the canals of the city, and the surrounding marshes and jungles." The coast is alluvial—nights sultry and moist, range of the thermometer 90 deg. F.)—*Am. Journ. Med. Sci.* Aug. 1830, p. 380.

27. St. Lucia is a small volcanic island, containing rich alluvial valleys, with morasses. The tropical vegetation accumulates large stores of decaying matter in the putrid swamps. Dr. Evans calls the exhalations from the marsh of Castries, deleterious; he smelt a disagreeable odour in crossing it, and was soon after taking with nausea, &c.

28. Smyrna is built on an alluvial plain, always moist. A sulphur spring exists near the town. Its commonest diseases are miasmatic fevers.

29. Mr. Darwin remarks that in certain parts of Peru, the sulphates of magnesia and soda effloresce upon the soil, and the mud of the neighbouring saline lakes is black and fetid. That the worst attacks of ague occur here, whereas *in Brazil many marshes with rank vegetation, exposed to ardent heat, are more healthy.*

30. Certain marshes, at the foot of the Ligurian Appenines, were, until 1741, exposed to an occasional influx of the sea, which, coming in contact with their decaying vegetable matter, produced the most deadly miasm. In that year the sea was shut out, and although the fresh water of the marshes stagnates, they have not since thrown up any malaria.

The same is true of the basins of Motrone, and Perotto. (See a paper by Siguor G. Giorgini, *Annales de Chemie*, vol. 29.)

31. The intrusion of salt water into the marshes of Caitia, near Venezuela, produces the most fatal consequences. "So that negroes escape there, to avoid the attacks of the whites, as none dare to follow." Chagres owes its insalubrity to the surrounding swamps.

All the coasts on which mangroves flourish, are dangerous. The recess of the tide exposes to the air extensive surfaces of decaying vegetable matter, acting on the sulphates of the sea water, and throwing into the air, volumes of sulphuretted hydrogen. The deadly malaria of the South Carolina rice fields is produced by letting in the sea water to the young plants, by which the weeds infesting the rich alluvial grounds are destroyed, and abundance of sulphuretted hydrogen produced.

32. The places enumerated, with numerous others, in which bilious endemics occur, are characterised by the requisites for the generation of sulphuretted hydrogen gas. The worst fevers prevail on alluvial sea-coasts, and yellow fever seldom attacks any other places. The cases 17, 18, 19, 29, 30, 31, are sufficient to establish the present proposition, but the argument may be further fortified by the examination of certain places which have ceased to be unhealthy.

33, There is none, perhaps, more remarkable than the city of Calcutta, which, at first founded on a salt marsh, was deadly to Europeans. But the talents and industry of its colonists have rendered the place healthy by draining, cleaning, and paving it thoroughly. The fate of Fultah, below Calcutta, is different; from being the abode of luxury, it has relapsed into its primeval condition of a marshy jungle, where fever and pestilence prevail.

34. New York, before its marshes are filled up with the red sandstone detritus of the island, was liable to severe remittents. European writers on malaria speak to the present day of the yellow fever of that city.

Norfolk, Va., has rapidly improved in health, since the better paving of the streets.

35. Panama, once subject to the severest fevers, has become healthy by the destruction of the neighbouring forests.

36. We find also, that in those localities where one, or all the conditions necessary for the production of sulphuretted hydrogen are absent, ma-

laria does not exist. Such is the case in Malta; the plains of Russia; the Sandwich islands; Gibraltar; the elevated plains of the Andes, and Mexico; table lands—of this kind is the western part of the state of Pennsylvania, reputed by Dr. Callaghan (*Am. Journ. Med. Sci.*, Nov. 1828) to be free from all malaria; sandy deserts as those of Africa and Arabia; the pine barrens of Carolina, Georgia, Alabama, &c.

37. It would, however, be premature to state, that in every case where bilious fever has been detected, sulphuretted hydrogen also existed.—The whole subject of malarious diseases is obscure. The catalogue of endemics attributed to this cause includes a host of ailments from ague to yellow fever, typhus and plague itself. There is some mistake here; either the exciting causes vary, or the whole of these diseases are not produced by miasma. Some of these complaints are undoubtedly produced by other causes. The discoveries in physiology made by Dr. Marshall Hall, have led to an axiom in medicine, at one time hardly suspected—*that dissimilar causes may produce similar symptoms;* which doctrine may be applied to the list of miasmatic diseases with profit.

The dispute between the contagiousness and non-contagiousness, the malarious or non-malarious origin of yellow fever, shows how undecided the profession are on this subject. This disease was called an epidemic in Gibraltar, in 1828—because of its appearance in a place which presents few of the characters of malarious localities.

38. In some of the cases adduced in the enumeration of places remarkable for malaria, it is questionable whether the means of generating sulphuretted hydrogen exist. This is the case in all inland positions, where it is uncertain that sulphates are found in the waters of the place. To decide so extensive a question, much diligent research undertaken by many persons is necessary. That the gas does exist inland has been proved by several sections, but whether the sites are malarious or not, remains to be determined. One case of the inland contemporaneous existence of miasm and the deleterious gas, I have had the means of observing. At a distance of ten miles from the college, an attack of bilious fever occurred about the middle of July, in the present year, prostrating about thirty servants. It was attributed to the frequent inundation of the low grounds of the plantation, during the spring. The individuals first attacked had been exposed to the fogs of the low grounds. Being interested in the matter, I paid the place a visit; and learned from the proprietor, that it had enjoyed an immunity for several years; and that a number of ditches had been dug in the marshy part of the lands. It occurred to me that this fresh exposure of alluvial soil might have been the cause of the invasion of disease, and I obtained permission to test the opinion by depositing two prepared coins (4) in the ditches. In a fortnight, which was the earliest opportunity of communication with the plantation, the coins were discoloured, notwithstanding the occurrence of freshets which interfered with the action of the reagent.

A number of cases similar to the preceding, would furnish the profession with the means of successful induction, and lead to the determination of the question under consideration. The means of submitting the proposition to experiment are so simple as to induce a belief that before long the solution will be effected.

(To be continued.)

Contagious Property of the Discharge in Gonorrheal Ophthalmia Destroyed.—Dr. Décondé, a Belgian military surgeon, states that the discharge in gonorrheal and granular ophthalmia is deprived of its contagious properties for a time by the application of a solution of nitrate of silver, but recovers it if the application is not continued. The liquid chloruret of lime also neutralizes its virulence, and the effects thus produced are persistent, the discharge not resuming its contagious property after the disengaging of chlorine. It may, under such circumstances, consequently be applied to the interior of the urethra, or between the eyelids, with impunity.

INCONTINENCE OF URINE, SUCCESSFULLY TREATED BY NITRATE OF POTASH.

By J. YOUNG, M.D., of Chester, Delaware County.

Eneuresis is so disagreeable and loathsome a disease, and frequently so difficult to manage, that the following cases, with their treatment, may not be devoid of interest to a portion of the practitioners of our art; inasmuch as the article used, it is believed, is not to be found among the means generally recommended by authors for that purpose.

In the winter of 1828, I was requested by my friend Dr. R. C. Marsh, one of our oldest, most intelligent, and myst experienced practitioners, to take charge during his absence, of a highly respectable lady about 50 years of age suffering from incontinence of urine. He informed me that all the means that are usually prescribed had been used in this case, and had failed; that he had been trying for more than a week, the tinct. lyttæ of the pharmacopœia, and he now had prepared a saturated tinct. which he proposed using, and to which I at once agreed.

The perineum was then sore with a blister, and the saturated tincture was given in rapidly increased doses, until a teaspoonful three times a day was given. It produced no effect whatever; but on the 4th day of its use, I found her affected with a tolerably violent catarrh, with cough, coryza, considerable fever, an irritable pulse, and an exceedingly irritable state of system. There was no change in the eneuresis.

Deeming it improper to continue the course agreed on with Dr. M. under this new state of things, the tincture was discontinued, with the intention of resuming it again as soon as the catarrhal affection had subsided. A saline cathartic with demulcent drinks, bathing the feet at night, and a dose of paregoric at bed-time, were recommended. This was February 5th, 1828.

7th. I saw her again, found her much relieved of the catarrhal symptoms; there is still, however, some feverishness and irritability, without the least improvement in the original complaint. Directed nitrous powders, 10 grains every three hours, and continue demulcent drinks.

9th. She is entirely relieved, not only of the catarrh, *but also of the eneuresis*. She was as much rejoiced at this result as I was surprised. She said, that after taking a few doses of the powders on the day they were first used, the incontinence ceased and has not yet returned. I ordered a gradual withdrawal of the medicine, and did not see her again, as the period of Dr. M.'s absence was about expiring, and he would again pay such attention as the case might require. I subsequently learned that it did not return, and that the cure was complete.

This was the first case of the kind I had ever seen, and its accidental cure made an impression on my mind that has been of advantage since, in the treatment of similar cases. It is, fortunately, not very common, in country practice at least, as I have met with but five cases of it since; three females and two males. The first, and only prescription used in each case, was *ten grains* of pulverized nitre every three or four hours with flaxseed tea to drink, and they have all yielded within 24 hours of commencing treatment.

Supposing that the same treatment might be serviceable in congenital incontinence, or where children from five years old and upwards wet the bed, I have tried it in one case, and with complete success. A boy between nine and ten years of age, who rarely in his life had escaping wetting the bed one or more nights in the week, was ordered 10 grains nitre three times a day for a week; during this time he escaped his filthy practice; it was omitted three days, and then ordered to be given four days in the week, omitting it three. It was thus continued five weeks, when it was entirely discontinued, he not having wetted the bed since he commenced taking the nitre; nor did it return so long as he was under my notice, more than a year after. I have had no opportunity of trying it in any case since, but should any occur in future I shall certainly give it a fair trial.

I have supposed that the modus operandi of the nitre in these cases may be, by increasing the irritating properties of the urine, thus making it more stimulating to the bladder or its sphincter. If so, other preparations of potash or soda may be found serviceable in cases in which the nitrate may not succeed, and it thus opens a field of new resources from which we may bring relief, which could scarcely be found otherwise, to some persons suffering under one of the most disagreeable diseases human nature is subject to.

Perhaps, the mode of treatment here used may be an old one; but if so, I know not where to find it recommended,—certainly not in any of the authors that have fallen in my way.—*Am. Jour. of Med. Sciences.*

Chester, Del. Co., Nov. 29th, 1842.

Calomel.—Dr. Gardner having found a very remarkable difference in the physical appearance of two specimens of calomel, and an equally important difference in their medical action,—the one article acting as an irritant, and the other as a sedative; examined them under the microscope, and ascertained that crystalline fragments could be detected in some specimens in considerable proportions, and of far larger size than in others, every specimen varying much in this respect, although all of them were perfectly impalpable, the fine white light calomel, which acted as a sedative, having much fewer and far more minute crystalline particles than the others. It is prepared in the following manner:—the sulphate is formed in the usual way, and after mixture with chloride of sodium, subjected to distillation into a dry chamber, the process being repeated two, three, or more times, until the chloride comes over quite white, and entirely free from perchloride. The advantages of this process, Mr. Davy, the manufacturer, considers to be, its avoiding the powdering and washing, and yet obtaining a perfectly pure chloride in the state of an impalpable powder of a very white colour.

Poisoning by Arsenic.—Dr. Augouard publishes a case of poisoning by arsenic, in which 15 scruples of that mineral had been taken about half-an-hour before he was sent for: the attendant symptoms were, violent burning pain at the epigastrium, increased by the slightest touch, ineffectual attempts at vomiting, intense thirst, contraction of the upper and lower limbs, their extremities cold; the pulse slow, the respiration slightly accelerated, intellect clear. The treatment relied on consisted in the administration of an emetic of tartarized antimony, which caused free vomiting of blackish, mucous matter, and was followed by large doses of nitrate of potash in decoction of mallows. The secretion of urine, however, did not take place until seven hours after the ingestion of the poison, when it became very abundant, and continued so for some time. The antiphlogistic treatment was afterwards adopted, and the patient was cured in a fortnight. The case is published by Dr. Augouard, in illustration of Orfila's opinion that, in cases of poisoning by arsenic, the secretion of urine is arrested, and consequently diuretics are indicated. Judging from the details of the case, the patient may be said to have recovered in spite of the doctor, inasmuch as the only really useful remedy had recourse to by him was the exhibition of an emetic for the dislodgement of the poison. The administration of diuretics to combat the non-secretion of urine, caused by taking so powerful a poison, leaving out of view all the more dangerous consequences induced by it, seems to us so one-sided a practice that, despite the *prestige* of Orfila's name, it is not likely to be adopted in England.

TO CORRESPONDENTS.

M. N. *tells us that Mr. Thompson, of the Westminster Hospital, has recently "come in" for £80,000, by the death of a step-father. We are glad to hear of so interesting a fact. The profession must feel a pleasure in having, now-a-days, a chance of looking on a rich surgeon. Our correspondent adds that a special court of examiners was held a few days since, for the admission of Dr. Corregan, of Dublin, into the College of Surgeons.*

H. M.—*The question of Quarantine will not escape our attention in its due time.*

We are glad to hear that we misconceived the intention of "An Enemy to Hole-and-Corner Surgeons." *We like the maxim,* "*De mortuis nil nisi bonum.*"

Peter Priggins *writes, requesting from Dr. Willis the donation of more civility to readers, in consideration of his £300 salary. Our correspondent, while making this request, inconsistently enough calls Dr. Willis's situation a sinecure, and wishes the salary to be spent in prizes for students. He likewise trusts that his complaint, reaching further than to Dr. Willis in his "studium metamophosis," may give cause to* one *sensible act on the part of the Council, in which case* Mr. Priggins *will challenge distinction with Mr. Guthrie, as the greatest reformer of the age.*

Mr. John Stanton.—*We think the Forceps Controversy may be now justly closed, the charge and answer being published: all further communications, therefore, can only appear as advertisements.*

Numerous contributions have been received which are under consideration.

THE MEDICAL TIMES.

SATURDAY, JUNE 10, 1843.

Aide toi, le ciel l'aidera.—FRENCH PROVERBS.

WE understand, from a quarter we can implicitly rely on, that Sir James Graham now avows that he has no great hope of *introducing* his Medical Profession Bill this session, and is quite certain that it must wait another session before it can be discussed or passed. We were not unprepared for the admission. The cause of this may arise partly from the clouded state of the world political. Few sessions have so far advanced, and left so much, and of such vitally important matters, yet to be settled. But the main cause is to be found in the state of the Medical Reform question itself. Sir James started on a bad principle. He thought of satisfying the discontent of the medical community by yielding himself to the direction of those who aroused it. He dreamed of removing grievances through the aid of the very men whose interests were identified in the maintenance of those grievances. It was not, we dare say, that Sir James had any overweening notion of the talismanic power of that comprehensive genius which some of his adherents persuade him that he so largely possesses, that he undertook with so much confidence a labour which, to ordinary mortals, appears of so Herculean a character, and thought of carrying it on by hands so little calculated for the task. Beautiful as is the work of conciliation and friendly compromise, the home secretary probably knows as well as any other mind of ordinary observation, that between opposites there can be no complete amalgamation; that between the kite and the dove—the wolf and the lamb—the victim and the victimizer—there can be no very consistent unity of councils, nor very perfect harmony of action. His misfortune was, that he did not understand that it was in this combative relation the Medical *Corporators* stood to the Medical *Corporated*, Sir Benjamin Brodie, with his plausible candour and vague generalities, mislead him. With a liberality, the relic of former associations, he took the worthy chiefs at Pall-Mall and Lincoln's-Inn at their own price; gave himself, bound hand and foot, to their professions; and entered, with no lack of sanguine expectations, a career of medical legislation which, under his auspicious management, could not, he supposed, fail of success, when the very heads of the corrupt high places were themselves, one "the greatest," the other "the most philosophic" of reformers!* Sir James has found out his mistake, and is no doubt already disgusted with his work. He has discovered—what indeed we told him when he commenced business in his new character of successor to Messrs. Hawes and Warburton—that, so far from pleasing at once the rulers and the governed, twice his abilities would fail in getting the chiefs in accord on any one matter involving a new distribution, much less a loss, of the common spoil. The only chance he had of success was in taking up Medical Reform, not as a personal or corporate matter, but as a national question; and, after mastering the whole circumstances of the case, boldly legislating, not for vested interests, not even for the profession exclusively, but for the benefit of the whole community. He would thus have lost flatterers, and the good word of petty *cliques*, but would have won a nation's support, and posterity's gratitude. He chose another course: he undertook to work out the great improvements we require, through men to whom they must be worse than wormwood, and the result shews the wisdom of his selection.

This never ending procrastination of a settlement is a circumstance deeply to be deplored. The evils we suffer under are not those of a character which bear delay, much less improve by it. Society in its dearest and most valued relations possesses a vital interest in them. Every hour shews instances in which utility has been abridged, happiness destroyed, health impaired, by the tamperings of incapacity. Every day teems with cases in which lives have been made the forfeiture of mal-practice. The possibility of a remedy—the necessity of its application—is admitted by all who understand the subject; how great then the mischief of the delay?—a delay which, despite the strongest stimulus to action, seems, from past years' history, to promise never to have an end.

What again to a profession whose perfection is founded as well on quiet study as observant practice, must be the mischief of keeping for ever alive a question which, worthy of their best exertions, can only be brought to a just termination by a sacrifice to it of what would otherwise have been given to increased professional proficiency? It is idle to talk of the evils of discord, and the injury to science, of medical men engaged in public exercitations; the evils must exist till we get rid of the greater evil that causes them, and duty is forgotten where the sacrifice is omitted. Those who truly regret them, should shew their sincerity by exerting themselves in removing the incentive.

We have little doubt that the incertitude as to the future fate of our profession has not been without its share in the mercantile distress and embarrassment of which we have recently heard so much, and many of us probably (demonstrative argument) felt a little. The druggists cannot but feel embarrassment as to their future speculations, while remaining under their present state of doubt as to what extent they are to be affected. Parents hesitate about the settlement of their sons, and every where that is left undone, for doing which, there is no pressing necessity. On many accounts, therefore, this Parliamentary delay is to be deprecated.

Yet with all these circumstances before them, the Council of the Provincial Medical and Surgical Association, have recently come forward, and begged that nothing might be done until further enquiry has been prosecuted into the state of the medical profession. One not knowing how anxious the worthy functionaries expressing this opinion are to be relieved from their onerous and disinterested labours, would conceive them to have some interest in the non-concession of Medical Reform, or some expectation of being appointed State Commissioners of enquiry on the grant of their singular request. After the Committees already held, the blue books already issued, the pamphlets published, and the reports given to the world by this very Association, if we want additional lights to legislate by, we must fain make up our minds to do without legislation. Sir James has in these documents Moses and the prophets, and if he, and those acting with them, will not hear their teachings, neither would he, though a thousand new commissions were, at vast expence, summoned up to give him further information.

The Poor Law Commissioners have just published their Ninth Annual Report. It breathes a far better spirit towards medical men than we have been accustomed to notice in the literary productions of those gentlemen, though we regret to perceive that it presents us few grounds for hoping improvement in reference to medical remuneration. They have made, they tell us, some regulations as to the maximum number of inmates in workhouses.

The determination of this number has often been difficult, on account of the variety and uncertainty of the circumstances which require to be taken into consideration; but we believe that the

* See Mr. Guthrie's Lecture in our Journal in October last, and Sir B. Brodie's articles in the *Quarterly Review*.

limit which has been fixed, may, in every case, be be regarded as the number of inmates which, under average circumstances, the workhouse is capable of containing consistently with their health and due accommodation.

This is the account they give us of the success of their last regulations on medical relief:

We stated in our last Annual Report (par. 76-79) that we had issued in March, 1842, a general rule relating to medical relief, and we described its principal provisions, together with our reasons for establishing them. We have been occupied during the last year in gradually introducing the provisions of this order, which was so prepared as not to interfere with existing contracts, and did not come into full operation until last Lady-day.

The introduction of the provisions of this order has necessitated a revision of the medical arrangements of nearly every union in the country; and has given rise to much correspondence between the boards of guardians and the commissioners concerning the obstacles or objections to its adoption. These difficulties arose generally out of the regulations of the commissioners as to the size of the medical districts, or the payment of the fees for surgical operations and midwifery cases.

The order of the commissioners directs that, where it is practicable, the guardians shall divide the union into medical districts not containing an area greater than 15,000 acres, or a population greater than 15,000 persons. In the more thickly peopled parts of the country, where towns occur at small intervals, and a duly qualified medical man resides in every town, the guardians have generally been able to comply with this regulation; but in thinly peopled districts, such as occur in Wales, and several of the northern counties, it has been found as impossible to bring the medical districts within the prescribed area. Many of the medical districts in these counties still exceed 20,000, 30,000, or 40,000 acres. Moreover, in the northern counties, an additional difficulty was created by the fact that many of the resident medical men had no English qualification, and had only a qualification derived from a Scotch source. We have been advised that no authority granted by any medical body out of England constitutes a license to practise in England within the meaning of the Poor Law Amendment Act; and we have shown at length the grounds for this opinion in a minute dated the 12th May, 1842, a copy of which is inserted in the Appendix. We have accordingly considered it to be our duty, so long as the law respecting medical qualifications remains unaltered, to declare that no person who is without an English qualification can be legally appointed a union medical officer; and when a person possessing such a qualification could not be obtained, we have advised the guardians to contract temporarily with a medical man having other qualifications for attendance upon the poor.

The objections made by the guardians to the fees for surgical operations and midwifery cases prescribed by the commissioners have been generally founded on their amount, and their alleged tendency to discourage medical clubs, and to destroy the independence of the labourers. These objections have been particularly urged by the guardians of the Hitchin and St. Alban's unions.

With respect to the supposed excess in the amount of the surgical fees, we believe that they are not unreasonably high, if the medical officer performs his duty to his patient, and gives the number of attendances requisite for the proper cure of a fracture or dislocation of a limb. We are aware that in some parts of the country these fees may exceed the payments which medical men are in the habit of receiving for similar services from farmers and other persons in the middle condition of life. This inconvenience, however. (as we showed in our last Annual Report, par. 77), is inseparable from an uniform scale of payment for all the unions. No scale of payment can be fixed which suits both the thickly peopled and the remote parts of the country. If it be sufficiently high for the former, it will be too high for the latter, it will be too low for the former. In fixing an uniform scale, such as that prescribed in Art. 10 of our medical order, we could only adopt such an average amount as appeared to us best suited to the majority of cases, although to some cases it would be necessarily less applicable.

The worthy farmers seem strangely anxious to cut down the fees of medical men. In so worthy a cause they have even grown argumentative, and the Commissioners are compelled to meet them in discussion, on the ground of political philosophy. One of their objections—the tendency of the present "*high*" fees to discourage medical clubs and pauperize the labourer (poor fellow),—the Commissioners thus answer; (we must say we hardly know which we dislike most, the objection or the answer:)—

We are unable to see how they can produce this effect to a greater degree than the former mode of payment. The payment of the fee prescribed by the regulations affords no inducement to the guardians to give an order for medical attendance where it would not otherwise be given. On the contrary, the guardians will probably in general be inclined to be more circumspect in giving medical orders when the payment to the medical officer is considerable. If, therefore, the number of medical orders is not increased by these fees, they can have no tendency to encourage pauperism.

It is further to be observed, that the number of fractures and dislocations occurring amongst the poorer classes in a union within a year is not large. We insert in the appendix some accounts of the number of such cases which we have procured from different unions, and which show that their number is in general inconsiderable. But, if the number of such operations is small, the payment of the prescribed fees cannot tend, in any view of the case, to produce a sensible increase in the habits of pauperism. Even as to such accidents as do occur, we think it desirable, as we stated in the letter accompanying our general medical regulations (Eighth Annual Report, App. A., No. 6,) that in every case where an operation is required' a pauper patient should, if it be practicable, be sent to a public hospital, where he will enjoy the practised skill and combined judgment usually connected with such establishments. We likewise declared in the same letter our willingness to sanction any reasonable subscription to an hospital or similar establishment by a board of guardians for the union.

We shall return to this document next week; we wish we could express any thing like delight in the prospect. The Commissioners shew a state of things,as regards both our own profession and the mass of the community, all the less agreeable, as shewing that,in the words of the historian,we are almost as incapable of bearing a remedy for our evils as their continuance. As a correlative illustration of the guardians' anxiety to screw down medical remuneration, we possess, through the courtesy of a non-medical subscriber, a handbill circulated for Haslingden union. The following are the liberal terms for which, in their love of science and charity to their dependant poor, these worthy guardians offer their medical men:—

1.—HASLINGDEN, comprising the Townships of Haslingden and Hen-Heads, (and including the Haslingden Workhouse) £15—yearly salary.

2.—ACCRINGTON, comprising the Townships of Old and New Accrington, £15—ditto.

3.—EDENFIELD, comprising the Townships of Tottington-Higher-End and Musbury, £10—ditto.

4.—ROSSENDALE, comprising the Townships of Higher-Booths, Lower-Booths, and Cowpe, Lench, New-Hall-Hey, and Hall-Carr £12—ditto.

5.—NEWCHURCH, comprising the Township of Newchurch, (and including the Workhouse at Mitchell-Field-Nook) £25—ditto.

The Persons appointed will be entitled to such further remuneration for Midwifery and Surgical Cases, as is mentioned in Articles 10 & 12, of the general Medical Order, issued by the Poor Law Commissioners, bearing date the 12th March 1842.

Each Medical Officer will also be required to enter into a Contract for the Vaccination of persons resident in his District, at the rate of One Shilling and Sixpence for every successful case.

We are not acquainted with the population of the four districts first named; but are informed that that of the Township of Newchurch is above twelve thousand! that the number of inmates in the workhouse, on an average during the last twelve months, is from seventy to eighty; and that its distance from the residence of the nearest medical man is from one and a half to two miles!

MR. CARTWRIGHT'S LETTER.

To the Editor of the 'Medical Times.'

SIR,—In the number of your journal of Saturday the 27th May, you published a letter purporting to have been written by me, and addressed to you.

You have been imposed upon by some person, as I neither wrote the letter, nor was I in any way party or privy to its being written.

It is unnecessary that I should point out to you the reparation due to me.

In abstaining from taking any further notice of the articles contained in your numbers of the 20th and 27th May, reflecting on my professional career, I beg that I may not be considered as admitting the truth of the statement.

I remain, Sir,
Your obedient Servant,
SAM. CARTWRIGHT.

Old Burlington Street, June 1, 1843.

[It would have been well for Mr. Cartwright, and more agreeable to us, that the *tone* of the former letter had as been as calm and gentlemanly as that visible in the note we give above. The printer would then (as now) have overlooked smaller defects in the redeeming trait of a pervading excellence. We are bound to believe Mr. Cartwright's assurances: we are very anxious to do so; and as we may be taken to perform the duties we feel an anxiety for, we may be allowed here, we suppose, to offer ourselves as in the class of believers. Altogether this is a most singular business, in which it is most unfortunate that one cannot believe Mr. Cartwright's statement (as we are bound to do) without being completely at sea for a rational judgment. After his disclaimer we need hardly say, what however may be expected from us, that *we* have no knowledge, direct or indirect, as to the authorship of the impeached letter. It was evidently written by one who entertained for our journal great asperity of feeling, and who, if he expressed it in neither the most correct nor elegant language, was himself perfectly ignorant of any such cause for moderated self-complacency. *Lying* and ill-bred as was the testimony it bore against us, we would not certainly have published it, if in addition to the supposed lights it threw on the state of dental surgery, it had not, as a reply, a claim upon us, in fair play, to publication. Our comments, we trust, were not severer than such a view of the case justified. It is now, we must consider, clear that Mr. Cartwright was not the author; we can, ourselves, affirm, as matter of certainty from comparison of autographs, that the writing is that of *some* other person. Who the writer is, however, is yet matter of doubt: Mr. Cartwright has—at our request—examined the note without success as to the discovery, and a friend (high in his confidence) explains its exist-

ence by supposing it to be the forgery of some unknown and too active friend of that dentist. This is the best—though, we think, far from a satisfactory—explanation. With these circumstances, however, before us, we should not be content with ourselves if, unasked and unsolicited, we did not express the regret and annoyance we feel at being thus misled to launch remarks hurtful no doubt to Mr. Cartwright's feelings, through convictions which now turn out to have rested, as far as *the note* is concerned, on so erroneous a foundation. The cause was not ours, and Mr. C. cannot do better than beg his friends to give him a tru e to their well-meant hostilities.—Ed.]

REVIEWS.

Treatment of the Diseases of the Eye by Prussic Acid Vapour. By A. Turnbull, M.D., &c. Churchill.

The author tells us, that "amid a multiplicity of professional duties he has appropriated a few spare minutes to the preparation of this little work." This admission protects the brochure from our notice, which is rendered the more unnecessary, since the subject of of the book has been already noticed and discussed in our "Periscopic Notices."

Preservation of the Health of Body and Mind. By Forbes Winslow, Esq.

This is partly a reprint from a monthly journal. The author treats on Cold, Death, Malaria, Longevity, Sound, Metaphysics of Medicine, the Wanderings of the Imagination, Diet and Dietetics, Asphyxia as a Cause of Death, Mental Philosophy, Mental Influence on the Body, and Insanity—in the order we have given them. The subjects, if not very naturally connected, are each interesting; and Mr. Winslow brings a mass of information on each, which proves industrious habits of very discursive reading, and makes an interesting, not to say an exciting, book for minds which require nutriment one degree more solid than that found in a magazine or a novel. The best part of the book, though perhaps not the most amusing, is that which treats of Insanity. The author is here at home, and shews original powers which command respect. The facts collected are not rare—collection, indeed, seems Mr. Winslow's *forte*—but they are more novel, and furnish matter for much judicious observation. To sensible lovers of the rare, and the usefully curious, this book will bo a treat.

On Feigned and Factitious Diseases, &c. By H. Gavin, M.D., &c. Churchill.

There are two things which striko us in the perusal cf this work, the very great industry that has been shewn in the compilation of facts, with some little wonder that so sensible a book should have been produced on a subject which is altogether so practical a one, by one who has had little or no experience on it. The substance of the work is a prize essay of the University of Edinburgh, written in 1835. It has been since considerably enlarged, and is now a very good specimen of what industry and moderate abilities may do. If the author do not, after this terrible achievement, appear frequently before the public as a writer, we know nothing of the fascinations of literature to industrious plodders. The novelty of the work to persons conversant in the subject can of course be only a novelty of *manner*. This is mainly shewn in his classification, which, if it have no claims for any remarkable degree of acumen or acuteness has the merit of great simplicity. The author declares it to be founded on our means of diagnosis. In other words he takes diseases in almost any order, paying a little attention to their kinship in occasional cases. We own to a preference of this simplicity. The complicated artificial arrangements like those of Morieheau, Beaûpre, or Fallot, always leave us with some cases which belong to none of the heads which such nosologists furnish us, and with others that belong to more than one. Irregularity of system has here its advantages; it may be unsightly, but it is favourable sometimes to brevity, and frequently to completeness.

The book's value is to be learnt from what we have already said. It is a compendium of the history, and bibliography of feigned diseases, and as industriously and judiciously compiled, will be of use to army and navy surgeons.

[We should probably have noticed this work more at length, but having, while taking this notice of it, received a note from the author, who describes himself under the attractive name of "a reader," we are compelled to be more summary than we intended. Such interpositions of authors with reviewers is not perhaps generally considered an impropriety; if really not so, it is to our mind very nearly one.—Ed.]

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

French.—*On Hydropathy.*—In a former article we traced the history or rise of hydropathy, both at Grœfenberg, its native place, as well as in the other establishments formed in every part of Germany. We shall now lay before our readers the rules and manner of proceeding of this new method, reserving our own opinion upon this subject until a future period. The hydropathic treatment is composed essentially of three different plans. The only one of which we shall speak is the employment of cold water; but there are others not less powerful. We would especially refer to the means for promoting diaphoresis, as well as the obligation of treating patients in a mountainous, or at least, a healthy part of the country, in the midst of a pure and fresh atmosphere. To this positive injunction is added another possessing equal importance: this consists in the adoption of a particular diet, from which wine and stimulating drinks are rejected, as well as all condiments and made dishes, and the employment of water and the most simple substances only, or at least such as are reputed so, allowed, and these principally used in a cold state. This is not all. The hydropathists compel, as it were, their patients to make lengthened excursions across the rugged country during the cold and dry weather for the purpose of gathering their food; they are, however, permitted freely to gratify the appetite occasioned by this exercise and the constant washing out of the digestive canal by their copious draughts of water, and thus repair the losses occasioned by their almost incessant perspirations.

The advocates, as well as the critics of this system, have been in tho habit of referring only to the compulsory employment of cold water; and yet one cannot doubt but that the above auxiliaries must sometimes have the greater share in effecting the cure, and that in all cases they will contributo very actively towards that end. What physician has ever doubted the influence of a pure and fresh air, of frequent exercise in such an atmosphere, of a simple and almost primitive diet, and especially of the united application of these resources in affections of long standing—affections in which the organic molecules of the body are, as it were, corrupted; especially, as is usually the case, where these occur in the rich man, abandoned of necessity, if not from taste, to an idle life, in the poisonous atmosphere of the court or of the drawing-room, indulging usually with excess in a refined or highly seasoned diet, and living in constant opposition to the principles of moderation and the laws of nature? It is as a further aid to these agents that hydropathists have recourse to cold water.

The employment of cold water constitutes the basis of the hydropathic treatment; it is applied in two ways—internally and externally. Externally, it is used under the form of general or of partial baths: the latter being subdivided into demi-baths, hip-baths, foot-baths, and so on. Then come the applications of wet cloths, douches, and washings. The entire bath is taken in basins about nineteen or twenty feet in circumference, and of sufficient depth for a man of middle stature to plunge into up to the neck; the water of these basins is constantly renewed, and drawn off in like manner, by an express opening which thus removes the impurities left by the bathers. Moreover, twice a day the bath is emptied and cleansed out, so as to get rid of any matter that may be precipitated. Every precaution is thus taken for the bathers to be constantly in contact with water that is perfectly pure. The best water is that which is free from all admixture, protected from the rays of the sun, and with this view carried along well covered tubes, whether into the basin, or the reservoir whence it is drawn off. Places destitute of springs of this kind should be supplied by water perfectly c'ear and light, and containing as little salts as possible, the presence of which will be ascertained by the redness of the meat cooked in it. River-water has the defect of not being sufficiently cold and of not containing fixed air. In the absence of other, it must however be employed, but at those hours of the day when the sun has not yet reached it. River-baths are very advantageous to persons in health; but it is essential to stay but a short time in the water, and to follow up the bath by lengthened exercise.

The way of using the bath is, to plunge in while the body is covered with perspiration, and this immersion, they assert, is always free from danger, provided the organs of respiration be not over-excited. Thus it is recommended, whero the party has a certain space to run before arriving at the bath, to rest a little and tranquillize the lungs, after which he should quickly undress himself, without allowing the body to get too dry and cool, and thus lose the heat necessary to bring about re-action after the bath, and then throw himself into tho water head foremost, having previously wetted the head and chest, so as to prevent congestion towards these regions. This precaution is strictly adopted at Grœfenberg, where it is customary to jump into the water whilo freely perspiring. During the continuance in the bath, the head is to be occasionally dipped under the water. It is also useful to keep in motion while in the bath, whether by swimming, or by rubbing the affected parts freely with the hand. The duration of the bath is to be proportioned to the degree of coldness of the water, and to that of the vital heat of the bather. Nothing specific can be said on this subject. At Grœfenberg, where the water ranges from 5 to 8 deg. (cent.), no one remains in the bath more than six or eight minutes; that is the maximum;—the minimum is from two to eight minutes. We should avoid in these baths, not the first chill which is experienced on entering, but the second, which is a kind of ague-chill, and leave the water before it comes on. It is better to

bathe in chambers slightly heated, a few degrees only above the temperature of the water in the bath. On emerging from the bath a cloth is to be thrown over the body, which is then to be rubbed perfectly dry; after this, the individual should dress himself quickly, and walk about until the heat of the body is re-established. The use of warming-pans in bed should be avoided, as opposed to the principles of the treatment.

The demi-baths are employed in persons of very feeble habits or those who have not become used to the entire bath. Their temperature is to be raised to 12° (cent) at the highest. There are cases, when it is wished to make the demi-baths act as an excitant, in which the patient is detained in the water one or two hours, sometimes even as long as five hours. Then all the upper parts of the body are to be covered, and the bathing-tub so effectually enveloped that the head alone of the patient shall remain exposed. These are to be repeated according to occasion for several days in succession. The demi-baths, in their proper place, are employed immediately after the perspiration shows itself and are accompanied by general sprinklings of cold water over the body. Here, there is no necessity to wet the head or the chest before entering the bath; but a pailful of cold water is to be thrown over the head, which is to be briskly rubbed immediately afterwards, as well as the rest of the body. After continuing this friction for ten minutes, the patient is to quit the bath, rub himself dry, dress himself, and take liberal exercise.

From the preceding details, we can readily understand the modified effects produced by the external employment of cold water when used in the form of local baths, douches, ablutions and fomentations. We should say, however, that when the debility of the patient will not admit of any of these means followed invariably by frictions, their place is supplied by enveloping the body in a sheet soaked in cold water, which is allowed to drain a little, and with which one can more easily practice the prescribed friction. The external applications of cold water are, as we have said, made while the body is in a state of perspiration. Now, hydropathists provoke these indispensable sweats by an especial order of means. The patient is wrapped naked in a thick woollen covering, the legs being extended and the arms applied along the sides of the body. The covering, rolled in this manner around the patient, is fastened with bands adjusted before-hand This constrained and almost intolerable position is maintained for a longer or shorter period: seldom for less than an hour. It is always continued until sweating takes place. This may be accelerated by moving about as much as these swathing-bands will allow. As soon as it takes place, the window is to be opened and a glassful of cold water administered to the patient every quarter or half hour. The perspiration under this treatment will, it is said, sometimes be so copious as to soak through the bed and even drip upon the floor. When during this sweating great excitement takes place about the head, notwithstanding the abundance of cold drinks, the patient should be released from his swathing-bands. The duration of this sweating-stage is never less than an hour, and never prolonged beyond three or four hours. Then, when unswathed, the patient is to wrap himself up in a cloak and proceed to the bath, placed at some distance. In his passage thither, it is necessary carefully to guard the body thus reeking with perspiration against the influence of the cold air.

Water is used as a drink in combination with its outward applications: drinking is not allowed in the bath; but cold water is freely given to the patient while swathed in the bands and also while exercising himself after leaving the bath. Besides, the employment of water as a drink serves in itself alone as a means of treatment. One should not drink less than twelve glassfuls in the day, nor more than thirty; the habit is acquired by degrees; some persons on first using the water, experience nausea, vomiting and diarrhœa. It is not to be suspended for these symptoms; on the contrary, one is to drink still more frequently, for by this means, the symptoms are sure to be quickly checked. With hydropathists, water serves both as an emetic and as a purgative. It is combined in all cases with liberal exercise. The water for drink should always be cold and recently drawn, and the vessels which contain it should be hermetically closed in sandstone jars.

We have thus given a condensed sketch of the therapeutic agents and processes of hydropathy, with a view of better appreciating them by their combination. We see that they principally consist in the administration of cold water in abundance, both as a drink, and externally, combined with an energetic sudorific treatment, active frictions, almost constant exercise, simple regimen and pure and fresh air. We can now easily judge what the modern method has in common with the old as also what it possesses special and peculiar. We have shown, in the commencement of this article, the degree of efficacy which physicians have always attributed to the hygienic rules so earnestly recommended by the followers of Priessnitz. Thus, in this respect at least, there is nothing novel in hydropathy. On the other hand, Professor Boyer, in his historical and critical researches on hydropathy, researches to which we have been largely indebted in these articles, has collected together a mass of facts which clearly prove that in all ages and in numerous countries, the employment of cold water both externally and internally has been highly valued as a curative or hygienic agent, and that in many circumstances it has been regarded as a true panacea. These researches also establish the fact, that cold water has been employed to fulfil the various indications to which it is applied in the present day, that is to say, as a sudorific, a resolvent, a tonic, and a depurative; while, lastly, M. Bigel, an avowed partisan of the method of Priessnitz, acknowledges that 1792 a work attributed to Williaume appeared at Brunswick, in which we find proposed for the treatment of rheumatism, a plan exactly similar to that of Priessnitz, that is to say, cold baths, cold diet, free exercise in the open air, moderation in the use of spirituous liquors or highly seasoned food, and lastly, the abandonment of all kinds of medical treatment. From the above considerations and facts, no doubt can be entertained, but that the hydropathic method has been long known and practised, that its virtues, as well as the limits to which it might be carried, were not unfamiliar to the profession. But it must be acknowledged, that Priessnitz, and the modern hydropathists, have better comprehended the resources of this method; they have especially combined with it agents of acknowledged efficacy: they have, moreover, aided it by processes both energetic and ingenious, and thus they will have rendered service to science, when sound philosophy shall have disengaged from their practice all that is irrational, exaggerated, and superstitious. We shall, in a future number, endeavour to divest it of this alloy, and to give to this subject its just value and estimation.—(*Gaz. Med. de Paris.*)

VESICO-VAGINAL FISTULA — IMPORTANCE OF EARLY TREATMENT.

By J. NOTTINGHAM, Esq., Liverpool.

In a few instances I have met with this form of disease occurring after a second or a third parturition, although the previous labours had not been attended by any thing unusual or untoward. It is a most distressing complaint, and the sight of a single case of it is sufficient to convince any one of the importance of attending closely to the progress of the head of the child during labour; as well as to the length of time it is allowed to remain in any particular position, so as to bear for a long time on any part at all likely to suffer from the pressure. The same considerations remind us of the necessity of attending to the state of the rectum and bladder previous to the commencement of labour, and to keep them as free from their ordinary contents as possible.

The object of this communication is to recommend the early performance of any operation which may be determined upon for the relief of the malady in question: in some cases of the kind, I have found that the vesico-vaginal opening became considerably larger in the course of a few weeks,—and this apparently from the effects of sexual intercourse, as well as other causes.

In January last I was requested to visit Mrs. H., aged 36, who had been confined about three months before I saw her,—the labour was tedious and of many hours duration, the child (at the full term) born dead. Her two previous labours had been "natural," and were in no way complained of.

A few days after the last accouchement the patient discovered that the urine gradually dropped from the orifice of the vagina, that there was great irritation about the parts, and the thighs were fretted and sore; a few weeks later the urine occasionally gushed away in a considerable stream, suddenly, and when she did not expect it,—to her great annoyance, more especially if she happened to be at the time in an apartment where any of the other sex were present.

On examination I found the external genitals swollen and irritable, as the previously told history of the patient would have led one to suppose; the os uteri was in a perfectly healthy state, but a little below it, in the anterior wall of the vagina the end of the finger arrived upon a small opening, not quite as large perhaps as a silver fourpence,—its diameter being too short to allow the end of the finger to pass through it,—it felt as if evenly round, the border, smooth and regular, and evidently communicated with the urinary bladder.

The general health of the patient being good, she was recommended to submit to some operation, which might relieve her from her sufferings; a few touches of the actual cautery (from time to time) being at first contemplated.

The position of the opening and its relations to neighbouring parts, induced me to think at the time, that the complaint might have gone on better had the patient lived *sine marito*,—and she was recommended to do whatever we might resolve upon for the relief of the complaint at the earliest possible period,—as we gave her to understand, that in the circumstances in which she was placed it might be expected to increase in some degree.

Another examination was made three months after the first,—the external parts had now become as it were accustomed to the irritation they formerly suffered from, and seemed to be less sore than before;—but the fistulous opening was about three times larger than it was at the period of the first examination above

mentioned: this altered condition I attribute mainly to changes effected, *sub coitu*, and it appears that the general history of the case is much in favour of treating the malady as soon as the first irritation set up by the local injury inflicted has subsided. For poor people no doubt hospitals would be better than home management: this patient could not be induced to have any thing done for the complaint.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

A few Observations on Encysted Hydrocele. By Robert Liston, F.R.S.

The author commenced by referring to the excellent manner in which the subject had been treated of by former writers, both ancient and modern, and stating as an apology for introducing it, that he had recently made an observation which induced him to believe that some collections in the scrotum are more intimately connected with the testicle, or its seminiferous tubes, than has been generally supposed.

When swellings of this kind have attained a large size it is difficult, if not impossible, to distinguish between the encysted and the common hydrocele; so that it is only when we have the opportunity of examining them at an early stage of their formation that we can ascertain their nature correctly. He adverted to the description given by several authors of eminence, of cysts formed in immediate proximity to the testis or epididymis, and pointed out some of the principal characters by which encysted hydrocele is distinguished from collections in the tunica vaginalis. The peculiarity of the former is, that the fluid contained in it is clear and limpid, and exhibits no trace of albumen; and another is, that in the operations for radical cure, its walls are not so prone to take on inflammatory action as those in common hydrocele. One object of the author's communication was to give a rational explanation of this circumstance.

About nine or ten months since, he was consulted by a gentleman beyond the middle period of life on account of tumour of the scrotum. There was plainly fluid on both sides. The largest cyst was punctured, and gave exit to some eight or nine ounces of this fluid, resembling distilled water with a little soap diffused through it. The other side was punctured a few months afterwards, and five or six ounces of ordinary serum discharged. A short time since, the patient returned to have the first cyst again emptied. The fluid had the same appearance as before. It contained scarcely a trace of albumen. On the second day after it had been drawn off, a small quantity was examined with the microscope, when it was found quite full of spermatozoa. It contained, also, some of the primitive cells, in which the spermatozoa are developed, and mucous globules. Had the fluid been examined sooner, probably the animalcules might have been found in motion.

The preceding observation was lately confirmed by the examination of the fluid withdrawn from a small cyst in the scrotum of a man aged fifty-three, who had applied to be treated for a bad stricture. It was nearly transparent and colourless, and was found to contain numerous spermatozoa, some of which continued to move actively for a considerable time after the fluid had been drawn from the cyst.

The author referred next to several preparations of cysts connected with the body of the testis and epididymis, which he had lately attentively examined with the view of ascertaining, if possible, the nature of the connection between these collections of fluid and the glandular structure of the testis. He concluded with proposing the three following questions for investigation.

First. Dose the limpid fluid drawn from cysts of the scrotum, or inguinal region, uniformly, or often, contain spermatozoa?

Second. What connection subsists between the seminiferous tubes and these cysts?

Third. Whether dilatation of parts of the epididymis or vas deferens, from obstruction or otherwise, may not, in some instances, give rise to these collections?

If it be established that these cavities are always lined with mucous membrane, we should have an easy solution of the difficulty regarding a radical cure not following injection, as in the serous cyst.

Some Account of an Epidemic which prevailed at Tehera in the Months of January and February, 1842. By C. W. Bell, M.D.

The disease described by the writer occurred nearly simultaneously with an anomalous complaint, presenting symptoms like those of angina pectoris, which broke out as an epidemic, at Bagdad, and carried off many persons suddenly. The disease which the author witnessed was attended with a nervous excited action of the heart and arteries, periodical, but neither preceded by chil', nor succeeded by perspiration. Many of the patients were seized with fits, which in some instances resembled epilepsy, and in others were like apoplexy, with palsy of one or other of the extremities. In some cases the patients suffered only from numbness and sleeping of the hands and feet, and they had always more or less palpitations of the heart at the same time, sometimes amounting to pain. The attacks of spasm and loss of power in the extremities returned periodically in some instances, but passed off as single attacks in others. The author was induced at first to employ antipphlogistic measures, but these he soon abandoned, and had recourse to quinine. This last medicine he did not find so effectual as a combination of iron and assafœtida, which he gave on the first accession of the disease, and commonly with speedy success. Numerous cases are related to illustrate the disease and its treatment.

EXAMINATION OF THE BODY OF THE LATE MR. TYRRELL.

56 HOURS AFTER DEATH.

Chest.—The pleura closely adherent throughout the whole of the right side of the chest, by old adhesive bands. On the left by a few only.

The right lung hepatised, or consolidated, nearly throughout its whole extent; there being only a very small portion that was crepitant on pressure. The mucous membrane of the lower portion of the trachea and right bronchus thickened, and of a dark brick-dust hue. Left lung engorged with blood, but crepitating tolerably on pressure.

The pericardium considerably distended, and containing from an ounce and a half to two ounces of dark fluid blood. On the posterior aspect of the right auricle the investing pericardium, to a considerable extent, had a rough, depressed, and by the aid of a lens, an ulcerated appearance; while the opposite surface of the loose pericardium, to the same extent, had a granular or tuberculated appearance, very similar to the tuberculous accretions which we find occasionally on the peritoneum; there were two or three adhesive bands connecting these two surfaces.

The heart itself was twice the natural size; the muscular fibre pale, flaccid and flabby, and collapsing; the cavities of both ventricles much dilated, but without hypertrophy of the walls; the left ventricle more especially dilated; in the right ventricle were two or three delicate filaments of lymph of considerable strength, stretching between the carneæ columnæ and chordæ tendineæ, and across the cavity, the evident result of former endocarditis. All the valves of the heart and aorta were perfectly natural.

The liver was enlarged, very much indurated, especially at the superior portion of the right lobe, and granular throughout.

Signed,
H. S. Roots, M.D.
C. Aston Key.
George Beaman.
James Dixon.
William Trew.

Note.—The fluid blood in the pericardium was most probably exuded from the depressed and apparently ulcerated surface of the pericardium before stated.—*Medical Gazette.*

NATURAL MESMERIC LUCIDITY.

Dr. Teste, of the Faculty of Paris, in a work recently published, announces the arrival in France of a man who, in his natural state and apart from all mesmeric manipulations, has the power of seeing through opaque bodies. He is a Polish Jew, named Rabbi Horsch Dœnemark, and on his arrival at Mentz in August last, exhibited letters delivered to him by the Pope, Prince Metternich, and the first professors of Germany, testifying to the reality of his pretensions. The three *seances* he held at that city are asserted to have been in every way satisfactory. He read with ease a closed book when in contact with it by his hand. He has a son, aged ten, at St. Petersburg, who is said to possess the same extraordinary faculties in a higher degree. He is consulted in cases of sickness, or as to the future event of affairs; he is declared to have mentioned to the Emperor Nicholas what was contained in the apartments of the Empress.

PERISCOPE OF THE WEEK.

Medical Gazette; Dublin Journal of Medical Science; Medical Quarterly Review; Lancet; Medico-Chirurgical Review; Pharmaceutical Journal; Journal de Chimie Medicale; Caspar's Wochenschrift; Archives de la Medecine Belges; Annales d'Hygiene Publique; American Journal of the Medical Sciences; Journal de Pharmacie et de Chimie.

Polypus of the Trachea.—Mr. Stallard, of New Street, Leicester, mentions the case of a poor woman, 40 years of age, who was admitted into the workhouse under his care in April last, with symptoms of bronchitis. She died suddenly about four days after her admission; the fatal occurrence being almost immediately consecutive on a violent and prolonged fit of coughing. On examination of the body thirty-six hours after death, the lungs were emphysematous; the smaller bronchi healthy, but the right and left divisions highly congested. In the trachea was found a loose body of a polypoid nature, about the size of an almond, and having a pedicle about three quarters of an inch long. The trachea at its lower part was much congested, and about an inch and a half below the cricoid cartilage, on the left side, the mucous membrane was considerably thickened and inflamed. About half an inch below the cricoid cartilage, at the anterior part, were the remains of the pedicle of the polypus; and above this point, the trachea presented the natural appearance. The stomach was small and contracted. The liver on the whole larger than usual; it consisted of twelve or fourteen lobes, varying in size from

a nut to a large orange; the larger ones, three in number, corresponding with the right and left lobes and the lobulus quadratus; in structure it appeared to be healthy. The kidneys and spleen were very large; the uterus carcinomatous.

CIRRHOSIS OF THE LUNG.—The general characters of the disease of the lungs described by Dr. Corrigan under the above name, are, a tendency to consolidation or contraction of the pulmonic tissue, with dilatation of the bronchial tubes. According to Dr. C. the primary seat of the disease is in the web of cellular tissue which constitutes the matrix of the lung, which has a tendency to contract, so as to produce, when the disease is advanced, a very considerable obliteration of the air cells. He thinks the diminution of the lung the first step in the disease, of which the dilatation of the bronchi is a consequence. Laennec attributed the supervention of cirrhosis to constant cough and accumulation of mucus in the bronchial tubes.

PERICARDITIS SIMULATING CEREBRAL AND OTHER NERVOUS AFFECTIONS.—In the course of the Lumleian lectures delivered at the Royal College of Physicians, Dr. George Burrows narrates several cases of inflammation of the heart and its investing membrane, drawn from his own practice, or from the works of Andral, Bouillaud, Abercrombie, Hope, Stanley, Bright, Latham, Macleod, Rostan, and Mackintosh, in which the real inflammation was masked by symptoms indicative of disease in the brain or spinal cord, several of the cases recorded terminating fatally, in consequence of the nature of the malady not having been made made out correctly. Dr. Burrows says there is scarcely an affection of the cerebro-spinal system, which may not be simulated by inflammatory diseases of the heart and its membranes. The simulated maladies in the cases which he quotes were—inflammation of the brain and its membranes, mania and dementia, apoplexy and epilepsy, tetanus and trismus, and aggravated chorea and hysteria. In some instances the actual state of the heart and pericardium was discovered during life by the physical signs, in others it was not even suspected until revealed at the post mortem examination. In two instances, both of which terminated fatally, symptoms of tetanus shewed themselves; in the first case, dissection detected a general increased vascularity of the pericardium, with two ounces of pure creamy greenish pus in that serous sac, and old adhesions in either pleura. The brain and spinal cord with their membranes were generally congested. The spinal cord was rather firm, except at its superior enlargement, where there was a circumscribed spot of softening. In the other case, on dissection the brain was found to be quite healthy. No trace of disease was discovered in the spinal cord, except one old adhesion of the membranes, and some ossific scales on the surface of the arachnoid. The pericardium was large, and contained a considerable quantity of turbid serum, with a deposition of lymph adhering in several places to the surface of the heart. The heart itself was large; the valves sound. These cases Dr. Burrows calls examples of eccentric tetanus, the source of irritation being in the nerves of the heart and diaphragm; and, he adds, considering how obscure is the pathology and how difficult the treatment of tetanus, it behoves every one henceforth, in cases of trismus and tetanus when not of traumatic origin, to scrutinize the sounds and action of the heart by auscultation, and to seek for the signs of pericarditis. Numbers, he thinks, have perished from these supposed diseases of the spinal cord, when, in truth, the morbid action has been in the heart, and not detected. Dr. Burrows concludes his lecture by adverting to the treatment to be adopted in these complications, which should be essentially antiphlogistic. He seems to rely chiefly on the abstraction of blood, both general and local, and the free administration of calomel and opium. Of fourteen cases detailed by him, four only recovered, and three of these were treated on the calomel and opium plan, combined with the abstraction of blood. [We have recently had under our care a case of pericarditis from rheumatism, complicated with cerebral disturbance, which was treated on this plan and successfully.]

ACARUS SCABIEI.—When one of the early vesicles of scabies is examined with attention, a minute spot or streak may be observed upon some one point of its surface. This is the aperture originally made by the insect on its first entrance beneath the epidermis, and from this spot or streak a whitish line may be traced, either in a straight or curved direction, intó the neighbouring epidermis. The whitish line is the cuniculus or burrow of the acarus; it necessarily varies in length, being sometimes as much as five or six lines in extent, and, at its termination under a slight elevation of the epidermis, the little inhabitant lies concealed. The acarus may be easily distinguished by the experienced eye as a small dark point at the end of the cuniculus, and if a thin capsule of epidermis be raised in this situation with the point of a needle, the little creature is brought into view. There is no communication between the vesicle and the cuniculus, and the acarus is never situated within the vesicle or pustule. When examined with the naked eye, it looks white and shining, globular in its form, and very aptly resembling the little bladder of water of bonomo. The facility of extracting it is due in a great measure to its power of clinging, by means of a special apparatus which it possesses.

FATTY KIDNEY.—A woman, aged forty-five, remarkably fat, was admitted into the Necker Hospital under M. Bricheteau, with a series of symptoms leading to the diagnosis of pneumonia. She had not passed any urine, according to her own account, for fifteen days; she was catheterized on three successive days intervening between her admission and her death, without a single drop of urine being found in the bladder. The kidneys appeared plunged in the midst of an immense quantity of fat; they retained their form and natural bulk, but were transformed into two masses of compact fat, in which some vestiges of tubular substance were traceable. The pelves, ureters, and bladder seemed healthy; the latter did not contain any urine.

POMPHOLIX.—Dr. Seymour mention a case of pompholix where the patient took arsenic, but with little benefit, until a slight mercurial was added—half a grain of calomel night and morning. Mercurials in all forms had been tried before, but by themselves. Arsenic had also been given by itself, and so had a number of other medicines; but the combination of arsenic and calomel succeeded, and, observes Dr. Seymour, medicines in combination act with greater power and efficacy upon the disease than when taken in an uncombined state.

OLEUM JECORIS ASELLI.—Cod liver oil, when taken internally, causes a very nauseous taste not easily to be removed, somewhat resembling that of putrid fish; further, a biting sensation in the throat, in conjunction with the secretion of an adhesive saliva, which symptoms are most marked in proportion to the impurity of the oil. The eructation of a nauseous gas continues some time after taking the dose; it is followed by colicky pains, then light stools, together with an increased secretion of urine, both excretions possessing the characteristic smell of the oil. Its modus operandi may be said to consist in stimulating the lymphatic glands and vessels, and by these means increasing the activity of the capillary system. By its action on the former, the process of assimilation is facilitated, and the appetite increased; the quality of the blood is thus improved, and lastly, the different organs and structures of the body become better nourished, and receive more *turgor vitalis.* Both the brown and the yellow oils contain a considerable portion of iodine, on the presence of which perhaps some of their medicinal properties depend. The dose is one or two table-spoonsful two or three times a day: a cup of coffee after the dose removes the disagreeable flavour. It is recommended in gout, rheumatism, and scrofula, and has proved to be emmenagogue in many instances.

DEEP-SEATED SUPPURATION OF THE THIGH.—Mr. Henry James Johnson was consulted by a gentleman between 30 and 40 years of age, whose constitution had been much injured by residence in India, and by excesses, for a swelling at the upper part of the right thigh. It appeared that he had had a sore on the penis, and a suppurating bubo some months previously, from which he partially recovered, there remaining some fulness and pain in the groin. Ten days before he consulted Mr. Johnson he contracted a gonorrhea, which was suddenly arrested by the use of a very strong mixture of copaiba, &c., prescribed by a druggist, the swelling, &c., as suddenly increasing. The appearance of the limb when he called on Mr. Johnson was as follows:—the part below Poupart's ligament, and for five or six inches downwards bulged forwards, looked globular, presented some sub-cutaneous edema, with little reddening of the skin, but a sense of deeper fluctuation. There were also several enlarged glands in the groin. In the course of a few days the swelling was opened in two places, with discharge of a considerable quantity of pus, but there being still deep-seated swelling, pain, and fluctuation, the fascia lata was cautiously laid open by a crucial incision, about two inches below the fold of the groin. Matter welled up freely from the interior of the thigh, apparently through the channel that the profunda femoris traverses. The limb still continued of great size, and œdematous, particularly on the inner side, and the constitutional symptoms were of a grave character. There was evidently pus collected in the limb, and taking the course of the profunda, and Mr. Johnson then decided, with Sir B. Brodie's concurrence, on cutting on the inner side of the limb, behind the gracilis muscle, and turning up its border, thus arriving at the inclined plane of the adductor magnus, which would probably lead to the seat of the accumulation. This operation was attended with the happiest results—matter oozing out after careful and deep dissection. For some little time after this, the situation of the patient was precarious, but the matter drained off, the constitution rallied, and after the lapse of two or three months he was able to remove into the country. He has since returned to India in perfect health.

EXTIRPATION OF THE OVARIUM BY THE MAJOR OPERATION.—The extirpation of the diseased ovarium by the large abdominal section, which was performed for the second time in England by Dr. Clay of Manchester, has been recently practised in London by Mr. Walne. His patient was a lady, 58 years of

age, labouring under ovarian dropsy, of two years' duration. She had been a mother five times, and had miscarried several times. The general health was good. Mr. Walne's reason for choosing the major operation were these:—That it does not appear that a less extent of wound diminishes the danger of the operation, if at all; and that the complications which occasionally present, without being foreseen, can be more suitably dealt with by the surgeon through a free opening than through a small one. The operation was performed on the 6th of November; an exploratory incision, an inch and a half long, being first made through the integuments, and afterwards the peritoneum, which was next enlarged from above downwards, to the extent of thirteen inches, that is, from within three inches below the scorbiculus cordis to within one and a half of the pubes, avoiding the umbilicus. The diseased ovary, which proved to be the right one, not being attached by adhesions, a needle armed with a double ligature was thrust through the pedicle from behind forwards, each half tied separately, and the tumour cut away. It weighed more than 16 pounds. The oozing of blood which followed, was arrested by the application of a ligature round the circumference of the pedicle. The parts were brought together and secured by interrupted sutures, and strips of plaister. The patient bore the operation well, and, with the exception of vomiting, restlessness, and symptoms of strangulated hernia, which occurred twice, and were relieved by anodynes, and the removal of pressure, may be said to have had scarcely a bad symptom. On the 29th, the wound was healed, except a small opening at the lower end where the ligatures were lying, and one point by the umbilicus, of redundant granulation of the size of a pea The greater part of the mass removed was fluid, contained in one or more cysts. A substance of about the size of two fists, having at some points a schirrhous hardness and abruptness of form, occupied that part of the tumour where the remains of the fallopian tube, meandering towards its fimbriated extremity, sufficiently declared it to be the ovarium of the right side, much enlarged and changed in structure. The fluid was of the ordinary character of ovarian dropsical fluid, and the solid portion probably of a schirrhous character; the tumour, however, has not been cut into, Mr. Walne considering the disease as nearly in its actual form and size at the period of its removal, as it could be preserved, would be more valuable for the surgical illustration of the subject, than when cut into slices for pathological ends, as has been done by hundreds such, to which no other history than that of their fatal influence on the frame that bore them, attaches.

Sore Mouth of Nursing Women.—In some parts of the United States, women who are suckling are subject to a peculiar form of sore mouth, which has never yet been found among other women, nor in the male sex. Women of all classes and of all temperaments appear to be equally subject to it. It is always sporadic, never epidemic. The first symptom is a sensation of soreness and scalding heat of the tongue and lining membrane of the mouth, accompanied by a free discharge of a thin watery fluid, mixed with an increased secretion of saliva, which in a few days, as the soreness increases, becomes very profuse. The lining membrane soon assumes a deep pink color, and appears to be much inflamed, the edge and tip of the tongue become slightly ulcerated, and covered with small white pustules closely connected together, and which occasionally extend over the mouth and fauces, and into the pharynx and œsophagus through the alimentary canal. Some of these cases terminate fatally. The red or deep pink color, smooth and polished appearance, and freedom from fur of the tongue, and the thin copious and watery discharge constitute the chief peculiarities of the disease. The bowels are generally costive: The child in general must be weaned, but in some cases sulphur and cream of tartar to keep the bowels open, borax and honey, as a local application, and tonics will effect a cure.

Decomposition of Nitric Acid in Marsh's Apparatus.—Orfila advised, that suspected liquids should not be introduced into Marsh's apparatus, if they contained nitrous or nitric acid, or a nitrate, as in that case the disengagement of arseniuretted hydrogen would not take place directly, nor until a rather large proportion of sulphuric acid had been added, besides which the temperature of the liquid is greatly raised; a considerable effervescence occurs, especially if grains of zinc have been used, and, if it be attempted to in flame the gas, detonation takes place in the interior of the vessel, which is frequently blown to pieces. It has been supposed, that under these circumstances the nitric or nitrous acid was decomposed, and that water, and the protoxide and binoxide of nitrogen were formed. Messrs. Boissenot and Canat have recently undertaken a series of experiments to determine this question, from which they conclude, that whenever suspected liquids are introduced into Marsh's apparatus, containing nitrous or nitric acid, or a nitrate, water and ammonia are formed, with a disengaging of the protoxide or binoxide of nitrogen, according as the re-action is slow or quick, thus supplying the chemist and medical jurist with a certain and delicate means of analysis for all quantities of a nitric compound.

The Poison of Fever.—In a great majority of the cases in which we see typhoid fever, we are sure that some peculiar matter, generally absorbed from without, must be contained in the blood; as in the case of fever from malaria, from contagion, (whether of simple fever, or of the exruptive fevers) from inflamed veins, from animal poisons introduced by wounds, or from suppression of the natural excretion of the kidneys. That this peculiar matter, or the blood altered by it, should act like a ferment, assimilating much of the circulating fluid to itself, in the former case equally as in the latter, is quite in accordance with what has been observed, when purulent matter has begun to form in the blood.

Poisoning by Bitter Almonds.—A little boy, $2\frac{1}{2}$ years old, had a bag of bitter almonds given to him by mistake for the sweet almonds, part of which he ate, and part he gave a sister 5 years old. So marked a change followed the taking these almonds, that M. Schlesier was immediately sent for: he found the boy pale, the face contracted, the features altered, the pupil dilated, the respiration sighing, with continual somnolence, and a remarkable relaxation of all the limbs. He had vomited several times, and had thrown off a quantity of the almonds, smelling strongly of prussic acid. The little girl was similarly affected, but in a less intense degree. The treatment consisted in cold vinegaretted lotions over the whole body, and repeated emetics till the stomach was cleared of the poison; after which ammonia was given internally, and in a few hours they were both quite well. Several liquid motions which followed the use of the emetic, were free from the hydrocyanic odour.

Burns.—M. Debourge de Rollot strongly recommends a liniment made with equal parts of the chloruret of the oxide of calcium and olive oil in the treatment of burns. It should be spread on fine linen. and kept in place with a bandage, if possible. Previously to applying the first dressing, he advises opening the phlyctenæ, and removing a large portion of the epidermis with scissors,—advice directly contrary to the first principles of surgery. He prepares the chloruret by adding one part of the dry chlorite of lime to three of water, shaking the bottle several times, setting it aside, then decanting and filtering.

Adulteration of Jalap-Resin.—M. Peltier points out the fact, that the resin of jalap is sometimes adulterated with an equal quantity of guaiacum resin. He detected the imposition by the behaviour of the sophisticated article with the re-agents, guaiacum-resin being precipitated blue by chlorine, and green by the hypochlorites of soda and lime, while the resin of jalap, on the contrary, gives a white precipitate with chlorine, and a dirty yellow with the hypochlorites. The physical characters of the adulterated article resembled more those of the guaiacum than the jalap. Its odour was balsamic, its fracture smoother than that of jalap-resin. The two resins could be separated by the essential oil of turpentine, which dissolved the jalap, leaving the guaiacum untouched.

Asphyxia.—Between the months of Sept. 1817, and October, 1833, twenty-nine workmen were asphyxiated in opening ten cesspools, twelve of whom perished.

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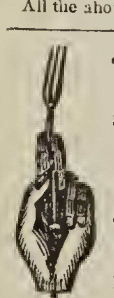

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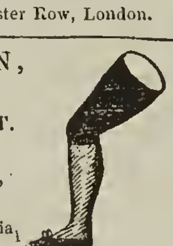

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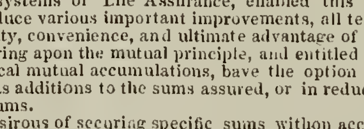

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No. 195. Vol. VIII. LONDON, SATURDAY, JUNE 17, 1843. PRICE FOURPENCE. STAMPED EDITION, 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE X.

The phenomena which I have now to bring before you are of a very extraordinary and interesting character; but, because they are familiar and common, and include what are called natural consequences, their curious and complicated results attract little attention, and few persons are aware of the difficulties which the philosopher has in tracing out their causes. I allude principally to the phenomena of *fermentation*. What, in fact, can be more wonderful than this? I dissolve sugar in water, and the solution has no tendency to change: I add to a gallon of this solution a teaspoonful of yeast: soon the whole bulk begins to alter in all its relations; its temperature rises, bubbles of gas form, and at length escape in quantities; there is a heaving, frothing, and effervescence, and after some days all subsides, and is quiet again; but I find that the sugar has disappeared—the liquor has, in fact, quite lost its sweetness, and has acquired a spirituous flavour, and become intoxicating; in short, *alcohol* has been formed; but of the original yeast, a trifle only is lost, and it manifestly cannot, therefore, have contributed directly to what has happened: the fact is, the yeast when added, provided it be in a proper state of activity or change, has the power of inducing the sugar to follow its example, and also to undergo a change, which change consists in its resolution into carbonic acid and alcohol, and this latter change is rapid and conspicuous, while that of the yeast is sluggish and imperceptible. How, then, does the yeast act? or what is the part which the ferment plays? Does the mere *contact* of the yeast induce the change in the sugar? or is it that the yeast itself, in a state of motion or change, has the power of moving the sugar to change also? Is it *catalysis?* Is it *eremacausis*? The fact is, it is easy to say, that the contact of the ferment induces the change, or that the ferment, being itself in motion, communicates motion to the sugar. Of these hypotheses, indeed, the *catalytic* is the least exceptionable, yet neither of them in reality explain the matter. Let us, however, see how far such notions can be borne out by any kind of experimental evidence, and although the observations I am about to make may appear irrelevant, you will, I think, see by-and-bye how they bear upon our present subject.

There can be no doubt of the influence of the mechanical over the chemical conditions of matter,—such as heat, attrition, or friction, and so on; but there are other less obvious influences arising out of contact, or superficial adhesion, and many such escape common notice; for instance, the adhesion of air to different substances. If I pour water from one vessel to another, an immense quantity of air is carried with it, and appears in bubbles, and foam. So much air adheres to the surface of metals, that if filings of them are sprinkled upon water, they float, notwithstanding their great specific gravity, being buoyed up by adherent bubbles, and when they do ultimately sink they carry a quantity of air down with them; but other substances exhibit no such tendency, and when similarly sifted upon water go at once down, though much lighter than the filings. Now, something of this sort of adhesion of hydrogen to the surface of platinum, appears to be the cause of the curious phenomena which ensue when finely divided, or spongy platinum is brought into the contact of a mixture of hydrogen and oxygen: it induces an immediate chemical action between the hydrogen and oxygen, and the result is, the formation of water, with the evolution of so much heat as to ignite the metal, and consequently enable it to inflame the gases; but the platinum itself, though thus active in inducing these curious changes, does not undergo any change. Now, this is one among several analogous cases, of what have been *contact-action*, or *catalysis*, and in which *combination* is the result. The cases of decomposition by contact are some of them equally puzzling: peroxide of hydrogen is instantly decomposed by some of the metals and oxides, without themselves undergoing any change. Again, if I fuse some chlorate of potash, and drop in a fragment of oxide of manganese, oxygen is abundantly evolved at a temperature at which such decomposition of the salt would not otherwise have taken place, and yet the manganese seems only to have acted by contact, for I cannot shew you that it has itself undergone any change: yet it is not a mere mechanical effect, for every solid body thus dropped in would not, I believe, answer the purpose.

Now another series of obscure causes of chemical change, and which have more immediate bearing upon our present subject, are those in which something beyond mere contact is requisite; and in which a substance in itself in a peculiar state of action or change, is capable of exciting or inducing a peculiar but very dissimilar series of changes in other bodies. To limit myself to chemical illustrations without going into physiology or medicine, I will at once take the action of yeast and other ferments, as an example of this kind of action. Yeast is an azotised body, which in itself, and as such, has no power of so dismembering sugar as to resolve it into carbonic acid and alcohol; but if the yeast be thrown into a peculiar state of change by the action of oxygen and water, and in that condition be presented to a solution of sugar, new changes immediately commence. The ferment you see, may exist and lie dormant till the presence of oxygen renders it active, and capable of communicating its activity to other bodies in the way I have described. If, for instance, I express the juice of grapes, cautiously avoiding the contact of air or oxygen, the grape juice remains unchanged, though the azotised ferment is contained in it; but I now throw up a little oxygen into the juice,—a bubble is sufficient; and now the ferment begins to change, and has become capable of inducing that new arrangement of the elements of the sugar to which I have adverted. It would, I think, be absurd to compare this to anything like mechanical force; it is an action *sui generis*, of which we can give no satisfactory explanation. The action of emulsin upon amygdalin and sinapisin, the details of which I gave in a former lecture, also furnish remarkable instances of this recondite catalytic, or contactial action. Such also is the conversion of starch into dextrin, and of dextrin into grape-sugar, by the action of dilute sulphuric acid; in these cases the acid itself remains in *statu quo*.

In reference to these cases generally, you will, then, observe they are of two kinds:—1. Those in which the induced action is the apparent result of mere contact, and in which the body which induces the change is, chemically speaking, passive; 2. Those in which the induced action is the consequence of some chemical change actually going on in the inducing agent. To this latter class belong those substances usually called *ferments*, and which are concerned in inducing the conversion of a solution of grape-sugar into alcohol and carbonic acid; or which, in other words, excite fermentation: these substances appear to belong to the azotised class of proximate principles, of which I have formerly said so much, and it would seem that in many instances one such form of matter may be substituted for another. *Yeast* is familiarly known as the commonly employed material: but fibre, membrane, and other things in incipient states of decomposition may be substituted.

I must now return to the subject I began with, namely, *vinous fermentation*. In each of these vessels, a solution of sugar has been mixed with a little yeast, and the process has been completed in one, and is now actively going on in the other: in the former all is quiet, and I will pour out and distil the contents of the vessel; it has lost its sweetness, and, by distillation, I shall get spirit of wine: in this other vessel the fermentation is at its height; it is frothing up, and carbonic acid gas is abundantly evolving. Now, in reference to these changes, you will first have to recur to the composition of sugar, and I may here remark, that whatever denomination of sugar you start with, it becomes *grape sugar;* this is the preliminary step. This grape sugar then suffers a dismemberment, and is resolved into *carbonic acid*, which you see bubbling off from the safety-tube of our little vat, and into *alcohol*, which remains in combination with the water and the residue of the yeast. And here I shall find that a part also of the yeast has disappeared, and, in fact, I can trace *ammonia* among the products of its decomposition: but if, instead of using pure sugar and water, I had employed wort or must, I should then have found more yeast than I began with; that is, the azotised principles of the fruit and grain would make their appearance under that form. There is something very extraordinary about yeast, and its increase; and some microscopical observers compare this to a species of vegetation; some have gone so far as to consider the generation of animalcules a part of this process: however, the result is this,—the sugar, which consists we will say of 12 atoms of carbon, united to 12 atoms of the elements of water, is resolved into carbonic acid, which consists of 1 atom of carbon and 2 of oxygen; and into alcohol, which consists of 4 atoms of carbon, 6 of hydrogen, and 2 of oxygen. Now, you will observe, by reference to this diagram, that 180 lbs. of sugar will thus exactly yield 92 lbs. of alcohol, and 88 lbs. of carbonic acid: in other words, 1 equivalent of grape sugar is resolved into 2 of alcohol, and 4 of carbonic acid.

$$\text{Grape Sugar}\left\{\begin{matrix} C_{12} \\ H_{12} \\ O_{12} \end{matrix}\right\} = \left\{\begin{matrix} \text{Alcohol.} \\ 2\ (C_4\ H_6\ O_2\ ) \\ \text{Carbonic Acid.} \\ 4\ (C\ O_2) \end{matrix}\right.$$

Now, by reference to our former table, you will remember that an atom of cane sugar is represented by C_{12}, H_{11}, O_{11}; so that, in passing into grape sugar, it acquires an additional atom of water, and thus we can understand how it is that cane sugar furnishes more than its own weight of alcohol and carbonic acid, when perfectly fermented: it has actually been found, by Gay Lussac, that 1,000 parts of cane sugar yield about 537 of alcohol, and 513 of carbonic acid.

There is only one other remark I have to make in regard to this curious process, which is, that the metamorphic action is dependent upon the actual contact of the yeast, the particles of which, therefore, must be diffused through the whole mass of the fermenting liquor.

[In illustration of this, Mr. Brande put some yeast into a vessel with a false bottom, composed of a piece of cambric; this was filled with, and immersed in, a vessel of saccharine liquid: the fermentation, he said, would be limited to the inner vessel, and if it extended to the outer vessel it would be found that yeast-globules had found their way through the muslin diaphragm.]

Having said thus much respecting fermentation, we must now examine alcohol. I have already said that it remains in the fermenting vat, mixed with water and other things, from which it may be separated by the process of distillation; from the brewery, therefore, I must now take you to the distillery.

If I subject the contents of our fermenting vat to distillation, a spirituous liquor passes over, which receives different names according to its source, such as brandy, rum, whiskey, arrack, gin, potato-spirit, and so forth; these liquors derive flavour and odour from foreign substances chiefly belonging to the class of essential or volatile oils: they are to a certain extent purified by a second distillation, which, when carefully performed, and aided by the addition of well burned charcoal, potash, or certain other substances which either retain or decompose the foreign matter, yield the alcohol pure, or nearly so, with the exception of water: in this state it is called *rectified spirit*; and if this be mixed with quicklime, or chloride of calcium, and again cautiously distilled in a water-bath, what passes over is called *absolute alcohol;* this, when pure and anhydrous, is a fragrant, inflammable, pellucid liquid of high refracting power, volatile, and hygrometric; its specific gravity at 60° is 0.794: its boiling point is about 168° and the density of its vapour 1.6. It mixes in all proportions with water—the specific gravity of the mixture exceeds the mean, and heat is evolved; in fact, if we mix 50 parts of water and 54 of absolute alcohol, by measure, the resulting volume of the mixture is only 100, instead of 104. The empyrical formula of alcohol is C_4, H_6, O_2. The rational formula most commonly adopted is $C_4, H_5, O + HO$, which represents it as an *hydrate of oxide of ethyle.*

The intoxicating power of different liquors is directly as the quantity of alcohol which they contain; but there are exceptions to, or rather interferences with, this general statement which I must briefly mention The strongest wines, for instance, contain from 20 to 23 or 24 per cent. of alcohol, and brandy contains from 40 to 48 per cent. of alcohol; so that a glass of port wine is equivalent in strength to a glass of equal parts of brandy and water, and when we drink a bottle of port, we drink the equivalent of a pint of brandy: yet the effect of the latter would be inevitable inebriation—whereas, many people can take the former with impunity; and the brandy, mixed with its bulk of water, and so reduced to the strength of wine, would still be much more inebriating. Now, to account for this difference in the effects of wine and of spirituous liquors of equivalent strength, we must, in the first place, recollect that wine has never passed through the still; that in it, the alcohol and water are at all events in perfect combination, and the acid and other matters of the wine may also possibly mitigate its effects. Whereas, if I mix a pint of brandy with a pint of water, and immediately proceed to drink it, that mutual penetration of the aqueous and alcoholic particles, to which I have already alluded, has not had time to take place; the mixture, therefore, is more heating to the palate, and more powerful in its effects upon the nerves of the stomach than if it were a true combination. But we can put the truth of this opinion to a better test; for if I distil a bottle of sherry till about three-fourths have passed over, and then add a fourth of water to the distilled product, so as to make up the original volume of the wine, I shall find that this product is more heating and inebriating than the original wine, and that I leave in the still, or retort, a quantity of extractive, acid, and other matter, which materially affected the flavour and effects of the sherry. It is to such causes that I think we may satisfactorily refer the different effects of genuine wine, and of its equivalent in diluted alcohol; hence, too, the febriferous, heating, and dyspeptic effects of bad, brandied, adulterated, and *made* wines, and of the trash which is produced under the name of *wine* at ordinary tavern dinners. Some chemists have suggested the probability of the *non-existence* of ready formed alcohol in wine, and have supposed that the alcohol is *generated* by the action of heat, and is altogether a *product* of distillation; but, inasmuch as I can obtain the same quantity of alcohol by distilling wines at very low, as at very high, temperatures, and as I can get the full complement of alcohol from the stronger wines by the action of carbonate of potash, which abstracts water and separates alcohol without any distillation or other interference of heat, we must not allow those who indulge in excess of wine to lay any such flattering unction to their souls, or to use any such argument in opposition to the teatotallists. Lastly, that you may be able to judge of the relative *safety*, if I may so say, of the different wines, as far at least as their alcoholic danger is concerned, and compare them with each other, and with the more mischievous products of the still, I will refer you to this table, which shews their per centage in alcohol, or rather of spirit of wine of the specific gravity of 0·825.

	Proportion of Spirit (sp. gr. 825, at 60 deg.) per cent. by measure.		
Port	19.0	to	2.58
Sherry	18.2	..	1.98
Madeira	19.2	..	24.4
Raisin Wine	23.2	..	26.4
Claret	12.9	..	17.1
Sauterne	14.2	..	16.2
Burgundy	11.9	..	16.6
Hock	8.8	..	14.4
Champagne	11.3	..	13.8
Cider	5.2	..	9.8
Ale	5.5	..	8.8
Porter	4.2	..	6.8
Small Beer	1.3	..	?
Rum, Brandy, Gin, Whisky	57.6	..	53.3

Now, as regards ale, porter, and small-beer, you will observe, that they are harmless enough, as far as alcohol goes, and indeed in London, small-beer is often as free from alcohol as if it had been purposely compounded for the use of the teatotallers' society. But whence, then, the inebriating, or rather, I should say, the stupefying effects of so-called malt-liquors? I believe that these are almost entirely referable to adulteration, for although genuine ale, taken in large quantity, may certainly intoxicate, in consequence of the alcohol it contains, yet the effects of the strong beers sold by the retailers are very different from those of home-brewed malt-liquors. I suppose myself to be pretty fairly acquainted with all the mystery of the art of brewing as carried on by the great London houses: to three of them I have had unrestricted access, at all times and seasons, and have been minutely instructed in their proceedings, and I have not only never seen the smallest cause of suspicion as to adulteration or addition, but have every reason to believe, theoretically and experimentally, that they supply the public with the genuine fermented produce of hops and malt. That such is not the case in all breweries, the annals of the excise, the treatises on the art of brewing, the palate, chemical tests, and the consequences of indulgence in the beverages which they vend, amply demonstrate; but the public-houses and beer-shops are the head-quarters of these nefarious deteriorations; if they were limited to mere dilution of the original liquor, the fraud would be comparatively innocuous, perhaps beneficial; but the treatises to which I have referred, and the articles supplied by *brewers'-druggists*, (for some account of which I may refer you to excise reports, or to Mr. Accum's "Death in the Pot,") shew that this is far from the case. Thus green vitriol is used to make the beer frothy, treacle to sweeten it, cocculus indicus to intoxicate, pepper to sharpen it, grains of paradise to warm it, and salt to prevent its quenching thirst. But, I believe, one of the commonest, and at the same time, most pernicious narcotic additions, is tobacco, which, being licensed for sale at the publicans, is not, like the other articles, tangible by the officer. I really believe, that I have not given you an exaggerated account of the composition of the trash which, under various seductive names, is pumped up from these underground laboratories, and retailed at the bar and tap, and this it is which the labourer, because perchance it is stimulating and stupefying, considers as strengthening and comforting. I could give you much the same account of the manufacture of gin, and other "rich cordials and compounds," but these matters would be irrelevant here, and indeed I must apologise for having already transgressed my limits. I should be too happy if any suggestion of mine could furnish any addition to the arguments against drunkenness, which is so fatal and increasing a propensity.

In looking at the table of the strength of wines, you will observe, that what are usually called *made wines* stand high on the list, a circumstance easily accounted for by the quantity of sugar employed in their manufacture, and the frequent addition of no inconsiderable proportion of brandy. These wines are always inferior to those derived from the grape, partly from their tendency to acetification, and partly from the nature of the acid which they contain, and in which free citric acid often abounds; whereas the acidity of the grape depends chiefly upon the presence of bitartrate of potash, which (in proportion as alcohol is developed) is thrown down in the form of *tartar*, for it is insoluble in dilute alcohol; the stronger, therefore, the wine, the less of the tartar will it retain: hence, its gradual deposition, first in the cask, and afterwards in the bottle. The effervescent wines, and especially champagne, are liable to mucous fermentation, so that they sometimes become ropy, as it is termed—an effect which may be prevented by the addition of a little tannin.

I must now call your attention to the series of changes which oxidizing agents effect upon alcohol, either by the abstraction of hydrogen, or by the addition of oxygen, for they act in both ways. If I distil a mixture of alcohol, binoxide of manganese, and dilute sulphuric acid, the evolved oxygen *dehydrogenises* the alcohol, and I obtain a product which has thence been designated *aldehyd*, the formula of alcohol being C_4, H_6, O_2, that of aldehyd is C_4, H_4, O_2,—to obtain it I apply a gentle heat to a mixture of three parts of binoxide of manganese, two of alcohol, two of water, and three of sulphuric acid; effervesce ensues, and a liquid distils over, which is a diluted aldehyd: it can only be obtained pure by the decomposition of aldehyd-ammonia. Pure aldehyd has a peculiar, but not disagreeable, odour; it is extremely pungent and suffocating, and irritates the nose and eyes; its boiling point is below 80°—it burns with a pale flame, and when added to oxide of silver the metal is reduced, and the aldehyd acquires oxygen, and becomes *aldehydic acid*$=C_4, H_4, O_3$.

[Mr. Brande shewed the action of aldehyd upon a solution of nitrate of silver, and the flask in which the experiment was made became lined on the interior with a brilliant metallic film.]

The odor of diluted aldehyd is not unlike that of nitric ether, and the preparation known in pharmacy under the name of *sweet spirit of nitre*, generally contains aldehyd.

But I must quit this curious subject to carry you to another of more general interest, namely, the formation of *acetic acid*, or vinegar.

In the common process of vinegar-making, wine, or beer, or a wort brewed for the purpose, are exposed, at a certain temperature, to the limited access of air: oxygen is absorbed, alcohol disappears, and is replaced by acetic acid. Now, although this change is generally complicated with others going on at the same time, it really amounts to this,—that the alcohol loses 3 atoms of its hydrogen, and gains an atom of oxygen, for the composition of acetic acid is empyrically represented by C_4, H_3, O_3,—in other words, an atom of alcohol$=C_4, H_6, O_2$, by the absorption of 4 atoms of oxygen, becomes converted into 1 atom of acetic acid$=C_4, H_3, O_3$, and 3 atoms of water$=H_3, O_3$; and this may be the proper place to mention a theory which has been proposed in reference to these compounds generally. I have already adverted to a hypothetical hydro-carbon$=C_4, H_3$, called acetyl. Now, it is evident, that aldehyd,

aldehydic acid, and hydrate of acetic acid may be regarded as hydrated oxides of this radical, thus—

Acetyl	C_4, H_3,
Oxide of acetyl	C_4, H_3, O
Hydrate of ditto, or aldehyd..	C_4, H_3, O+HO
Aldehydic acid	C_4, H_3, O_2 +HO
Acetic acid (anhydrous)......	C_4, H_3, O_3
Hydrate of ditto	C_4, H_3, O_3 +HO

You will observe, in regard to the production of vinegar, that the same extraordinary *catalytic* action of a *ferment* is required to upset the constitution of alcohol, as we have formerly observed respecting the change of sugar into alcohol, for a mere mixture of pure alcohol and water, though duly supplied with oxygen, will not enter into acetous fermentation. The present mode of making vinegar will illustrate these points: one part of alcohol is mixed with about 10 of water, and a little yeast is added. This mixture is then made to trickle slowly over the shavings of birch, or beech wood previously steeped in vinegar, and so arranged as to be exposed to a free current of air. This operation is continued about three days, when the vinegar is perfect. By the old process, as many weeks would have been required: it is a simple method of exposing alcohol to the action of oxygen, under the influence of the ferment.

It is obvious that vinegar made by any of these processes must contain many things besides acetic acid and water: if we distil it, we get, in what is called distilled vinegar, a comparatively pure, but still very dilute acetic acid. Now acetic, like many other acids, cannot be isolated; we only know it as combined with bases, or with water, and in its purest and most concentrated state (what is termed pure acetic acid), it is a compound of an atom of anhydrous acid and an atom of water; the formula C_4, H_3, O_3, representing the acid as it exists in the anhydrous acetates, and C_4, H_3, O_3, + HO, being this hydrate of acetic acid, or as it was formerly called, *radical vinegar*. To obtain it in this, its most concentrated form, we decompose certain acetates by sulphuric acid, and so distil over the volatile hydrate of acetic acid. It is a very pungent caustic hygrometric liquid of the specific gravity 1·062, soluble in all proportions in water and alcohol; its vapour is inflammable, and when subjected to a cold of about 32 deg., it congeals, and remains concrete, or crystalline, up to about 50 deg., hence the term *glacial* applied to this concentrated form of acetic acid.

[Mr. Brande here entered into some details respecting the density of different mixtures of acetic acid and water, and the means of determining the value of diluted acids, which were illustrated by tables too extended for insertion.]

Much acetic acid, not only for the purposes of the arts, but also for the use of the table in the form of vinegar, is also obtained by a process to which I alluded in a former lecture, namely by the distillation of wood; hence the term *pyroligneous acid* originally applied to it as derived from this source. The white non-resinous woods are used for this purpose; they are subjected in iron cylinders to the action of heat gradually raised to redness, and a highly complicated series of products are thus obtained in the form of condensible and uncondensible vapours, while an excellent charcoal (that employed in the manufacture of gunpowder) remains in the cylinders. The liquid which passes over, contains, among other things, that extraordinary compound, called pyroxylic spirit, or alcohol of wood (hydrate of methyle), which is obtained by a second distillation, and used sometimes for burning in lamps, and as a substitute for alcohol in the manufacture of certain varnishes. It also contains acetic acid.

[Mr. Brande here explained these matters, and more especially the mode of obtaining the pure acetic acid from the crude pyroligneous spirit, by reference to a series of tables, and concluded this part of his lecture with an account of the principal acetates and their manufacture.]

Having thus put you in possession of the composition of alcohol, and of the products resulting from the action of oxygen upon it, I have next to treat of the *ethers*.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

We have now to consider the nervous diseases affecting the air-passages, or the diseases of those parts which perform the functions of sensibility, irritability, and motion, as connected with the air-tubes.

Now, first, with regard to the larynx; I have already mentioned laryngitis and its varieties, which, arising in some degree from inflammation, are exaggerated, or often aggravated, by the sudden supervention of a spasmodic affection; the spasm excited under these circumstances by the increased irritability of the parts, being, in some instances, much more manifest than in others. I mentioned, in speaking of one particular kind of cough, although it is generally attended by a peculiar irritability of the bronchial tubes, or of the larynx, yet that it often depends more on the general property of the nerves—the irritability especially affecting that portion of the nervous system connected with the respiratory apparatus. There are, however, peculiar affections occurring independently of this, which we shall have to notice. In children, for instance, there is an affection called *laryngismus stridulus*, the spasm being connected with the croupy or crowing inspiration of infants, and giving every reason to believe that it is a nervous affection, whatever different views may be entertained as to its precise character. The character of this affection is chiefly as follows:—The child, in a state of ill-health, is seized with a fit of crying, or a sudden stoppage of the breath, and struggles greatly during the continuance of the paroxysm; when the fit is prolonged, the face becomes flushed, and then livid, the struggles resembling those of asphyxia; if this continues long, it must be fatal. It often, however, lasts but a few seconds, and then is succeeded by a prolonged noisy inspiration, something like that of croup—a loud, ringing, crowing sound, produced obviously by the passage of the air through the constricted larynx. This is heard when the paroxysm goes off, and with it there is a diminution of the other symptoms; and the child becomes as well as before. This attack may come on several times in the day; sometimes without any obvious exciting cause; sometimes when the child is fretful and irritated, or when tossed about very quickly in the air; sometimes, too, it takes place in connexion with the irritation of teething. In other instances, it is connected with a disordered state of the bowels, but this is not very common. Another circumstance that contributes much to it, is close, confined air, of an unhealthy character. The children inhabiting cities, particularly in dark, close, and densely-populated streets, are often affected by laryngitis, and they cease to be affected in this way when removed to more healthy situations. This, you will find, is common with many nervous affections.

Now, with regard to the peculiar nature of this disease, it is obviously of a nervous character, something that comes and goes, and it is seldom that it is caused by any organic change; and in those cases where this does occur, it is connected with some disorder of the nervous system. It has been described by many eminent surgeons as an incipient kind of convulsive disease, and it is observed that it occurs in little patients in whom there is a predisposition to convulsion. Sir J. Clark, Dr. Chambers, Dr. Marcet, and others who have given this opinion, pointed out the peculiar drawing in of the hands and arms, and the clenched fists, occurring in these subjects, as a proof of a general convulsive tendency. It has been supposed to be connected with incipient hydrocephalus, but Dr. Merryman found, in connexion with this affection, that there was no disease of the brain whatever, but in some instances he found the glands of the neck enlarged, and thus pressing upon the recurrent and laryngeal nerves. Some of the German writers have described a disease similar to this, coming on in children, and they have ascribed it to the enlargement of the *thymus* gland, which presses on the nerves, and probably on the trachea, thus producing a kind of asthma. Now, from this circumstance, a notion has arisen that the disease always depends on paralysis of the recurrent nerve, from the supposition that the recurrent nerve regulates and supplies the muscles which open the glottis, while the superior laryngeal nerve supplies the muscles that close the glottis; so that, when the muscles that open the glottis are paralysed, the closure is produced by spasmodic action. Dr. John Reid stated that the recurrent nerve did not exclusively regulate these muscles, but that they are also supplied by voluntary nerves controlling the *thyro-arytænoideus*, which opens the glottis, and the *arytænoideus transversus*, which closes the aperture. But still they may be acted upon to a certain degree, through the influence of the motor power. Now, I do not think that Dr. Reid's opinion can be adopted to the fullest extent, for we can hardly reject the fact that there is a want of controlling power in those cases where the inferior laryngeal nerve is injured, or its function destroyed. It appears that the glottis is caused to contract in three ways:—First, it may contract through irritation, acting directly on the inferior laryngeal nerve; secondly, by the reflex action through the superior laryngeal nerve, the same that regulates in some degree the action of the œsophagus; and thirdly, it may be caused to contract by mechanical means. All these different causes may come into operation, and lead to the closure of the glottis, so as to interfere with the function of breathing. There are other causes which produce it, besides those I have mentioned; such as pressure on the laryngeal nerves, excessive irritation induced by other causes, as teething in an irritable child, or a disordered state of the bowels or of the alimentary canal. We know that, under these circumstances, convulsions are produced, and the distant extremities are affected through the irritability of the spinal marrow. This is a common occurrence. Again, there is another circumstance that in some instances leads to this form of convulsion, and that is, a general loss of voluntary power, in which cases we commonly find the muscles of the larynx affected also. Dr. Reid in some of his experiments found that the larynx falls together, that the aperture is closed by the act of inspiration; and that, therefore, this falling together of the cheeks of the glottis is, in some measure, a mechanical closure from a want of power to keep them open. This does not occur constantly, so that I doubt whether Dr. Reid's experiments bear upon this point. We do not find the croupy inspiration occur in every case: there must be something in addition to this, there must be a contraction of the glottis to complete the spasmodic action.

Hitherto we have considered merely the diseases of the parts and nerves capable of producing this spasmodic action; for instance, disease or paralysis of the recurrent nerves, or of the various nerves connected with the spinal marrow, which may produce it by causing a general irritation; and also general paralysis will produce it, probably in some cases with convulsions. This has been observed in cases mentioned by various writers, and I have seen it myself in epilepsy, though it is not a constant phenomenon; it rarely occurs in epileptic attacks in adults, as far as I have seen; but in children it is a very common occurrence that croupy inspiration takes place at the commencing period of a fit of epilepsy. I believe you will find an explanation of this in the fact, that the muscular apparatus of the larynx is in children peculiarly liable to this affection, because the aperture is naturally smaller, proportionally, to the aperture of the larynx in adults, and it becomes affected from any injury to the nervous system.

The causes of this affection are: hurried action of breathing, sudden exertion, as moving about quickly and causing a sudden inspiration to take place, or changes of temperature, and so forth; and this leads us to the consideration of the treatment. If, together with this condition of the breath, there be any symptoms of cerebral affection, then the treatment should be adapted to it. If there is a total absence of cerebral disease, and it occurs in children with scrofulous glands, or enlargement of the glands, then the treatment must

be of a different kind. In this latter case, the treatment should be directed to reducing the size of the glands: iodide of potassium, and mild tonics, are found particularly useful in improving the general health, and reducing the enlargement. Medicines should also be given to diminish the irritation that arises when this affection occurs in connection with teething. Small doses of calomel at night are found to answer best in these cases. In many instances we find a combination of causes, requiring a complication of treatment. With regard to the treatment of intermittent paroxysms, the child may die from asphyxia, and, therefore, it is of great consequence to treat these paroxysms. This may be done in several ways. The great object is, if possible, to bring about a regular inspiration, and this may be effected, not so much by violent efforts, as by producing an impression on the nerves,—dashing cold water on the face, blowing forcibly into the nares: sometimes friction of the muscles of the chest, from the anterior part of the chest to the larynx, are very effective modes. Another mode is, by irritating the fauces, so that you may excite the act of coughing. These are the chief items in the treatment.

The prognosis varies; sometimes the child may speedily recover, and as I said before, in some instances, this affection is a precursor of disease of the brain. Spasmodic action is brought on by choking in attempting to swallow a morsel too large. This is an illustration of reflex-irritation, as choking is produced, not by the mere size of the morsel pressing over the larynx mechanically, but also by irritation, in a great degree. In females this is much more common than in males; but it is seldom a very serious disease, and where it does occur, it may be treated by strong anti-spasmodics.

There are some paralytic affections of the larynx which are serious, and the chief of these are to be distinguished by the loss of the proper function of the larynx—loss of voice, or aphonia. This is a nervous disease of the larynx, and it may arise either from paralysis of the nerves of the larynx, or from loss of power in them; or it may arise from relaxation of the chords, or from some affection of the muscles themselves. Now, this may exist in different degrees, and may be produced by a variety of causes. In connection with paralysis of the nerves, as one cause of it, I may mention an aneurismal tumour pressing on the recurrent nerve, and thus affecting the voluntary muscles of the larynx. This sometimes destroys the voice, and often impairs it to a considerable degree. Again, loss of voice arises from exhaustion, after violent vocal efforts, and after great fatigue of the vocal muscles. Sometimes it takes place in connection with inflammatory or congestive disease in the larynx, where there is a deficiency of secretion, or a thickening of the membrane. It may be treated in different ways. If it arise from pressure on the nerve by a tumor, the disease is hopeless; but if it depend on mere weakness or exhaustion, rest will restore it: sometimes, however, there is a relaxation left behind after exhaustion, and tonics may be required. But sometimes, when the patient regains his strength of body, the voice is not recovered, and under these circumstances stimulants are useful, as well as certain tonics. Shocks of electricity passed through the larynx restore the voice in the same way. A strong solution of nitrate of silver is sometimes very efficacious. When loss of voice follows a cold—not caused during a cold, for then the usual antiphlogistic remedies are to be used—but after that, various stimulants and astringents will be found useful: the application of nitrate of silver is sometimes particularly useful, combined with general tonics.

The next affection to be noticed, is spasmodic asthma. The word asthma itself is applied to dyspnœa occurring in fits, where it comes on in paroxysms, leaving the breath comparatively free in the intervals. Hence the term has been applied to many of the diseases I have already described; Bronchorrhœa, as I said before, comes on in fits; as also does bronchial congestion. Again, there are many diseases which are apt to produce dyspnœa in fits—as emphysema of the lungs, and diseases of the heart; but there are some cases of dyspnœa coming on in fits in which none of these conditions exist: neither bronchial congestion, nor bronchial flux, nor any organic disease; the spasm seeming to be dependant on some peculiar nervous cause, such as occurs in hysterical or nervous females. But the attacks come on quite suddenly, when the patient may be removed from the influence of any known cause. It may be produced by strong or peculiar odours. Many asthmatic patients are peculiarly nervous, and the odour arising from a stable has frequently produced a paroxysm in them, which has been removed as suddenly, when the patient has been withdrawn from the influence of the odour. The odour of ipecacuanha has, in several cases, produced the paroxysms, and the patient becomes very often a test of the presence of ipecacuanha in the house. These cases are more curious than instructive. Difficulty of breathing is sometimes brought on by exposure to the wind. Laennec gives a very curious instance of a man having a fit of dyspnœa, brought on by exposure to the east wind; he began his walk with the wind in his face, and an attack of dyspnœa came on with such intensity, that he felt quite overpowered, when turning back he recovered; he again attempted to pursue his journey; but the attack was renewed, and he was finally forced to return. These are the chief circumstances which point out its peculiar nervous characters. It is very true that attempts have been made to deny that there is any such thing as spasmodic asthma of late years, the denial extending not only to the share that the nerves have in it, but also to the irritability of the bronchial fibres themselves. Several French writers have broadly denied it.

Severe paroxysms of spasmodic asthma cause the patient to make that remarkable attitude so well known as symptomatic of this disease: the patient feeling the constriction at the chest, and an increasing oppression in the breathing, puts himself into an attitude that best assists the voluntary muscles; sitting up in bed, bending forward the body, and leaning the arms upon his knees, he raises the shoulders as much as possible, and thus calls the respiratory muscles into violent action, the patient puffing and blowing away with the greatest effort: and attending these efforts, we find a turgid, livid face, staring eyes, profuse perspiration, and loud and noisy breathing, which, moreover, is but imperfectly performed. On listening to the chest in this state, we are struck with the little effect produced by the air in passing into the lungs; the movements of the chest are extremely violent, all the muscles are greatly contracted, while the vesicular murmur is chiefly heard, with various whiffing sounds, in different degrees. There is another sound, too, that I have heard since my attention has been turned to this subject. I find the sound is somewhat exaggerated about the root of the lungs, and towards the middle of the sternum; so that it appears that the sound which is heard in other regions of the chest, chiefly comes from these parts, and these are the parts most constricted. Then, there is another fact, first pointed out by Laennec, and that is, that the respiration is not uniformly even. The paroxysm obscures it now and then, and in the midst of this difficulty, the breath seems suddenly to enter and to give a full inspiration. I have mentioned the sound on percussion; we may be led to suspect that it will not be much changed, inasmuch as the vesicular texture of the lung seems but little altered; but if you try percussion, you find more dulness than usual. This arises, in a great measure, from the constricted state of the muscles of the chest. You find, that the sound obtained by immediate percussion from different regions, does not materially differ, but there is an equality of sound all over the chest. The spasm I was mentioning of a tonic character, is owing to the sudden contraction of the bronchial fibres, which may continue for some length of time. Now, the long continuance of this spasm, or its frequent recurrence, may have a mischievous effect, particularly where congestion or inflammation occurs, as is sometimes the case. Persons subject to nervous or spasmodic asthma, may be affected with bronchitis or bronchial congestion, and where these continue for a length of time, a change is produced; and hence the disease, at first of a temporary nature, may by-and-by become more permanent. The spasm is often aggravated by disease of the bronchial tubes. In some of the more serious cases, we must look to the nervous system for a cause; nervous disease of a permanent character being commonly found in connection with spasmodic asthma.

The treatment may be resolved into two indications: to relax the spasm, or counteract its exciting cause, and to guard against a spasmodic exacerbation; and secondly, to remove the cause, or to lower the irritability of the nervous system. To fulfil the first indication, various measures may be adopted: when the character of the disease is exclusively nervous, anti-spasmodics are useful—ether, valerian, assafœtida; strong coffee is perhaps more effectual than any remedy I have mentioned. I have known strong tea produce relief in some cases. The remedies most useful are those that diminish the irritability of the bronchial fibres, and the extracts of stramonium and belladonna, given internally, are found exceedingly effectual in these cases. In some instances, hydrocyanic acid seems to act like a charm in relieving the paroxysms. Belladonna and stramonium may be given in doses of from half a grain to two grains, but these are seldom efficacious long: they often lose their power for a time, and produce other symptoms. It is frequently more easy to prevent than to relieve the paroxysm, and it is a question whether strong electrical shocks may not be useful in this case, by exhausting the irritability of the bronchial fibres. Cold affusions are useful in some severe cases. In some cases strong counter-irritants are serviceable, but there is no certainty in them. In one case they may allay the symptoms, and in another greatly aggravate the attack, by exciting the nervous system. The other indication is, to diminish the irritability of the bronchial fibres, and to remove the causes of irritation. This is often done by means that relieve the nervous irritability in general, by anti-nervous remedies: some act temporarily, such as valerian, assafœtida, and so forth; and some act gradually, such as metallic tonics, sulphate of zinc, nitrates of bismuth and of silver. All these remedies, given in spasmodic asthma, often have the effect, not only of relieving the paroxysm, but of diminishing the tendency to it. How they act, I cannot say; whether their action is directly on the nervous system, or whether they improve the state of the digestive organs and the circulation, by equalising it, or in any other way, I cannot tell you; the fact is, that such is their effect.

Ligature of the Common Carotid.—Mr. Spence, of Edinburgh, was consulted by a man labouring under ulceration of the face involving the bones, and accompanied by malignant excrescence from the external ear. Hæmorrhage having occurred once or twice to a considerable extent from over the zygoma, ligature of the carotid was decided on in consultation with Sir George Ballingall, and practised by Mr. Spence with the effect of arresting the bleeding, but the disease progressed, and the patient ultimately died comatose. Permission to examine the head could not be obtained; it was with great difficulty that an inspection of the carotid was agreed to. The edges of the incision were still open for about an inch in extent; the deeper parts of the wound were healed by granulation, and the divided ends of the vessel were connected by a quantity of firm lymph effused around them, whilst the par vagum and internal jugular were of their natural appearance. On laying open the artery, the internal coats were found fairly divided, and their ends retracted to some distance from each other and adhering to the external cellular coat. There was not any appearance of clot in the vessel, either above or below the ligature, so that the lymph effused around and between the cut ends of the cellular coat seemed to be the only obstacle to hæmorrhage taking place.

ON OPERATIONS FOR THE REMOVAL OF AXILLARY TUMORS.

(From the Medecine Operatoire of Velpeau.)

By J. NOTTINGHAM, Esq., Member of the Royal College of Surgeons of London, Corresponding Member of the Medical Society of Emulation, of Paris, late House Surgeon to the Liverpool Infirmary.

The cavity of the axilla is a region where the lymphatic glands frequently become tumid and degenerate. The diseases of the breast, as well as all those of the upper extremity, produce irritation in this part, and hence it is the locality of numerous tumours of different natures, nearly all of which, however, originate in the lymphatic glands. If surgeons rarely decide on the extirpation of these tumors, it is, on the one hand, that their nature does not always permit us to regard them as local and independant complaints; on tho other, that the operation itself is a delicate one, and really of a serious nature. The axillary vein, and the branches which it receives, expose us to the risk of great hæmorrhage should they be wounded, as well as to that dangerous introduction of atmospheric air, which it is so difficult to prevent in certain regions.

The corresponding artery, which it might be almost impossible to avoid, and the nerves of the brachial plexus, are additional circumstances which tend to arrest the hand of the operator; recollecting also that the manœuvres of the bistoury are necessarily embarrassed by the disposition and relations of the pectoral muscles in front, the shoulder behind and on the outside, and by the chest within, we know how to explain the reserve of most surgeons with regard to these operations.

However, having often met with lymphatic tumors of the axilla, the resolution of which could not by any means be effected, and which were gradually bearing their possessors to the tomb, I deemed it my duty to surmount this kind of repugnance and fear, and at present I operate for the removal of axillary tumors, in obedience to indications similar to those which regulate corresponding operations in the groin; indeed, it is an operation which, since 1837, I have practised a great number of times, and in a great diversity of cases; the result for me has been, as I am about to relate, the conviction that the operation in question is more frightful than really dangerous.

Many of the patients on whom I have operated, had tumors of enormous volume, which raised the great pectoral muscle, surrounded the brachial plexus or the blood-vessels, and prolonged themselves by their summit into the sub-clavicular space. Of a total of about twenty-five examples which I might enumerate at present, two deaths only took place; of these one was a young woman, on whom I operated in 1828, in the *clinique* of M. Bougon. In this case the tumour was as large as the adult head, filled entirely the hollow of the arm-pit, mounted up beneath the clavicle, and required an exceedingly extensive dissection. After we had some reason to hope for recovery in this case, the patient began to suffer from pleuritic effusion, and died in three weeks. The second patient was nearly sixty years of age. All the axillary glands required removal, one after another, whence resulted an enormous cavern, which was, however, afterwards nearly filled up, when the woman was attacked by erysipelas, and died. In a third case a patient who had undergone a similar dissection died after two months, from circumstances foreign to the operation. In all the other cases complete recovery took place, in most of them very quickly, or in from a fortnight to a month or six weeks.

There is one tedious inconvenience of this operation in cases where we are obliged to remove all the *ganglia*, viz. a derangement or obstruction to the circulation of the lymph, with a tendency to engorgement, and infiltration of the hand and forearm; whence we may have such contraction in the hollow of the arm-pit that the movements of the shoulder, and the abduction of the arm in particular, may be very much restrained: nevertheless, the mode of performing the operation, which is varied according to the size and precise situation of the tumor, reduces itself to two plans; in one we penetrate the axilla without dividing the muscles; in the other the lower border of the great pectoral muscle is divided, or even the thickness of the two pectoral muscles as far as the vicinity of the clavicle.—

First.—By the hollow of the Axilla.

It is seldom that the incision by the hollow of the axilla does not suffice in the performance of these operations; the patient is better placed on a bed than upon a chair. One assistant raises the arms, while a second is ready to compress the subclavian artery against the first rib. The surgeon, with a straight bistoury, makes an incision through the great diameter of the hollow of the arm-pit, stretching from the root of the arm over the tumor to reach the side of the chest. If this one incision be intended to suffice for the whole dissection, it is better that it should be nearer to the posterior than to the anterior margin of the axilla. On the contrary, should it be desirable to divide the hind lip of the wound, the first incision may be made near to the fore-part of the arm-pit.

Having thus divided the integument, superficial fascia, and the aponeurosis, one finger is passed into the wound to serve as a guide to the single or double hook with which the mass to be removed should be firmly seized. The surgeon then dissects the tumor on the fore-part, next behind, then within, and lastly, from below upwards, the assistant all the while making such traction upon it with the hook, as the position and movements of the surgeon may require. Having reached the hollow of the arm-pit and the side of the arm, I have often succeeded in detaching the tumor completely, by means of a bistoury, applied by small strokes, the index finger of the left hand directed backwards, and carried deeply, being engaged in raising the brachial plexus and the blood-vessels. This step of the operation, which sometimes permits the dissection of the important organs in the axilla, more or less in the manner of an anatomical preparation, is too delicate and too hazardous to be made the subject of a general precept. The best and safest mode of proceeding then, is to employ the finger as much as possible, in gently tearing away all the lobules of the tumor, which appear to be connected with the vessels or nerves, or which are prolonged in the direction of the clavicle, or the region of the neck. Supposing that the engorgement of the ganglia is prolonged merely by a pedicle upwards and outwards, it would be easy to surround it by a triple thread, and to strangulate it completely, for the purpose afterwards of cutting away the mass close below the thread, and thus removing it entirely. With these precautions, tumors not exceeding the size of an egg, may be promptly and easily removed. In the same way another kind, consisting of separate portions clustered together, in a way reminding us of grapes or raisins, and occupying more the thoracic side of the axilla, although very voluminous, may be removed safely, and without much difficulty; consequently, there are no real difficulties or dangers in these operations, except with regard to tumors closely connected with the root of the arm, or the articulation of the shoulder, and with those prolonged into the subclavicular region.

During the operation, there is commonly only a small number of arteries divided, and these are branches of the external mammary, of the anterior thoracic, and of the common scapular, rarely of the internal circumflex. They might be tied as they are divided, but there is no particular inconvenience in covering them with the end of the finger for a moment, and applying the ligatures at the close of the operation. I need not say that if the axillary artery should unfortunately be wounded, as in the case cited by M. Wolf, it would be requisite to secure it immediately with the ligature.

The most troublesome bleeding is that supplied by the veins, which is met with here as well as in the groin, in connection with the regurgitation of the venous blood from the heart. This kind of hæmorrhage first arrested by the application of the fingers, afterwards yields easily to plugging and compression. Having once seen the axillary vein opened in a case of this kind, I feel assured of the correctness of this statement.

In these cases I make a practice of not attempting union by the first intention. These are cases where the extirpation of lymphatic tumors leaves a cavern too winding, and a wound too irregular, to allow much hope of primitive agglutination; therefore, I apply soft *charpie* over all the points of the traumatic hollow, until it is completely filled, and even until a certain degree of compression be produced, in case it should seem desirable to guard against any threatened effusion of blood. Afterwards a piece of perforated linen, and a layer of *charpie* with a common axillary bandage, serve to complete the dressing.

Second.—By the fore-part of the Axilla.

If, on account of its volume, or of its primitive situation, the tumor could not be removed by the hollow of the arm-pit; if, as in the case of a young girl of 10 years of age, which I saw with Messrs. A. Berard and I. Cloquet, the tumor seemed to exist between the two pectoral muscles, or appeared as if spread upon their posterior surface, it would be better to divide the anterior boundary of the axilla than to operate in the way above described. In the young woman whose case I have before alluded to, and on whom I operated in the year 1828, it was requisite to divide the tissues obliquely from above downwards, and from before backwards, from the internal third of the clavicle as far as the inferior border of the latissimus dorsi muscle. With another incision parallel to the posterior border of the axilla, four flaps were formed, two of them small, which were turned downwards and backwards, and two very large, which were dissected and turned over, one towards the sternum, the other in the direction of the shoulder; the two last comprising the entire thickness of the pectoral muscles, permitted me by degrees to detach the tumor from the fore-part and side of the chest, which afterwards required to be followed beneath the sub-scapular muscle, and set free in that quarter; also above and from the fore-part of the clavicle and outside of the brachial plexus—the operation being terminated by removing a prolongation of the tumor of considerable size from the super-clavicular fossa.

In this operation the making of posterior flaps may be avoided by employing the T instead of the crucial incision; the horizontal branch of the T should be placed behind, parallel to the posterior border of the axilla, the vertical incision more or less oblique, starting from the fore-part of the clavicle. The two large triangular flaps thus formed would give all the freedom to be desired, and would be extremely well suited to any kind of dressing.

If the tumor projected more forwards than upwards, it might be reached by the semilunar incision, to which I have alluded so often. In this case the free crescentic border might be turned downwards towards the axilla on one side, or toward the sternum on the other, or toward the arm, as might suit the form of the tumor or particular indications; and for similar reasons the curve should be more or less deep, more or less lengthened. Once raised on its base, this flap would admit of the complete dissection of the tumor as well as the others, having at the same time the advantage of reducing the operation to a single incision.

The section of the fleshy fibres, about which some might hesitate, has nothing in it which is really grave. What I have previously said about the division of muscles and tendons, suffices to shew that mistakes had been made about this matter. If in this way then, the operation be rendered more simple, or less dangerous, there is nothing to hesitate about, and we ought, for such reasons, to operate through the fore-part rather than to enter underneath the hollow of the arm-pit.

After this operation, the dressing is more favourable to union by the first intention, than in the other method. Whatever may be the form of the wound, its borders ought to be approximated in such manner as to leave no opening, except at its lowest part; hence the flaps are placed so as to reconstruct, as completely as possible, the anterior boundary of the axilla. I would recommend, however, that the escape of purulent or other fluid at the lower part of the wound, be favoured by the presence of a small pencil of charpie. Union by the first intention in this region, as elsewhere, is obtained with agglutinating straps, aided by position or suture.

Here we should remark that in any case of

operation by the hollow of the arm-pit, if the simple incision do not suffice, the semilunar may be employed instead of the T or the crucial incision, the free border of the crescent being turned backwards and outwards.

By whatever method the operation may be performed, or the dressing applied, the arm should afterwards be kept fixed, and a little raised in the direction of the shoulder. After the first dressings, issue should be carefully given to the purulent fluids, as they are apt to stagnate in the wound. Hence, we ought to avoid the too speedy agglutination of the lower part of the wound, to carry the arm a little from the trunk, to substitute emollient cataplasms for the *charpie*, or even to employ emollient or detersive injections, to clear the traumatic cavity. Acting upon these principles, I have often removed tumors from the hollow of the axilla, where different practitioners had refused to attempt their extirpation. The tumor in a cluster, equal in size to the adult head, and which M. Goyrand removed with success, believing it to be scirrhous, was probably a lymphatic tumor. M. Lallemand also, who employed suture in uniting the wound, and who also thought that he had extirpated a cancerous tumor, would seem to me only to have removed some degenerated lymphatic glands. After all, if no one had as yet given precise rules for manual operation in the extirpation of tumors of the arm-pit, it is not less true that some surgeons had from time to time proceeded to operate. Even in the writings of Fabricius Hildanus, directions are given to expose such tumors, to draw them outwards, and to tie their pedicle deeply, before separating them completely from the body.

We need not trespass long on the time of the reader, to say that the same proceeding should be resorted to in cases where the tumors, not being lymphatic, are either scirrhous, colloid, encephaloid, fungoid, melanic, or fibrous. The only additional remark required, and which should not be lost sight of in such cases, is, that we ought not to attempt the extirpation of malignant tumors, if the least part would be likely to escape the reach of the bistoury or ligature; but glandular or tubercular tumors may be removed with great probability of success, even when many of the somewhat engorged ganglia are inevitably left behind.

Contagion of Fever.—Dr. Peacock, the superintendent of the Edinburgh Infirmary, says, though in the course of the last year fewer instances have occurred of fever being taken by the nurses or other attendants on the sick than in seasons in which the disease has prevailed more extensively, sufficient evidence has been afforded of its contagious nature. Of the six persons reported as having taken fever in the institution, four were nurses in the fever wards; the fifth was the porter of the laboratory, whose duty it is to shave the heads of the fever patients; and the sixth was the porter at the surgical hospital, who, though not ordinarily exposed to the influence of contagion, may yet readily have contracted the disease. Of the resident medical officers, two had attacks of fever and one died, and two cases occurred in non-resident clerks, of which one proved fatal.

Pulmonary Emphysema.—The great distention of the lungs in persons who die asphyxiated from drowning, &c., has been hitherto attributed to putrefaction, but an attentive examination of the pulmonary tissue during every season of the year, and particularly in winter, has convinced M. Devergie that it is owing to pulmonary emphysema, which he believes to be much more common than it is supposed to be, and that even a slight obstacle to respiration may cause it. It is produced during the last inspiratory efforts, or in the agonies which attend the expulsion of water from the trachea of the drowning. It is, however, only a frequent, not a constant accompaniment of death from asphyxia. It may in some cases be a cadaveric phenomenon.

ON THE ACTIVE PRINCIPLE OF MALARIA.

By DANIEL P. GARDNER, M.D., Professor of Chemistry, &c., in Hampden Sidney College, Va. &c.

(Continued from page 169.)

Proposition III.

Certain agents have been supposed to give activity to the exhalations arising from marshes called malaria.

39. There is no uniformity of opinion as to the deleterious agent. The vehicle which conveys it is, however, acknowledged by the inhabitants of the fens of Lincolnshire, the Italian, the American, and the Cingalesee, to be *dew.* All these observers and numerous theorists, coincide in this particular. There is an instinct in man, which warns him in a similar way. In consequence of this universal belief, that dew is an active agent in the production of this series of diseases, many have regarded watery vapour itself as the noxious matter.

40. Of those who have urged this proposition, Mr. T. Hopkins has exhibited the most address. In his paper (No. 86 of the London and Edinburgh Philosophical Journal,) he has done much, by pointing out the philosophy of the action of watery vapour on the human frame, towards establishing his position.

It has been, moreover, his fortune to follow a list of opponents, who argued more from obstinacy than on just principles; and who were content with a *word* signifying nothing. Thus we have it asserted, that if watery vapour be the cause of malaria, it should exist in the winter!—and the question is asked, whether water is a poison? It was not such *physicians* that could stand against his perfect argument—*that as the atmospheric capacity for vapour decreased in high temperatures, the insensible perspiration of the human body must diminish, and at 98° F. dew point, it must cease altogether.*

The argument is indisputable as a physical law. The fact is unquestionable, that such a state of the dew point may exist. But bilious fever is not produced thereby. In the frightful mortality, that attended the first efforts to circumnavigate the globe, scurvy was the cause, and not yellow fever. It is not on the sea, but the sea-coast, marshy and rank with man-groves, that it prevails. On shores which are sandy and barren, let them be ever so saturated with water, there is no malaria. The centre of a broad stream, as the Chesapeake: or of a lake, as Ontario and Erie, is healthy, whilst the shores are pestiferous. In Choco, where rain falls constantly, malaria does not exist. Mountainous countries are seldom free from vapours, but are without bilious fevers. On the contrary, unusually wet weather, attended with inundations over the face of swampy lands, keeps off marsh fever. It is well known that the miasm arises from wet ground in the act of drying, as when the alluvial beds of rivers are exposed. The fevers of Egypt occur when the Nile has subsided, and the lands are in a muddy condition.

But if the theory under notice be correct, why do the diseases occur in autumn, which is in the United States frequently a dry season? Mr. Hopkins has furnished a table in his paper, which tells well against his doctrine.

"*Mean monthly hygrometrical return for the year* 1832, *in the Island of St. Vincent, as given in the official report.*

January,	68.°68	July,	70.°25
February,	67.°14	August,	69.°66
March,	67.°99	September,	69.°69
April,	67.°93	October,	69.°39
May,	69.°30	November,	69.°41
June,	69.°25	December,	67.°31

"The most sickly period," says he, "extends from August to December." But by the table the highest dew point is in July, and the numbers given for January, March, April, May, and June, are so near those for October, November, and December, that the difference of dew point would, by no one, be urged as the cause of yellow fever.

Let it be remembered that the attacks of fever which occur in the West Indies, with a dew point at 80° F. and upwards, take place at a certain period of the year; and yet during the preceding healthy months the dew point has been at 60° F. and even 70° F., without any intermittent ague or remittent. Now, in the fens of England, in Holland, at Walcheren, the dew point seldom rises above 60° F., and yet those places are infested with malaria. The reduction to which the doctrine may thus be brought, is, that in the West Indies the mildest part of the year produces agues and intermittents; the spring—bilious fevers; and the summer and autumn—yellow fever. For, in the winter, the dew point reaches the malarious point of Lincolnshire and Cheshire—in the spring, that of Italy; and in the summer, that of the African coast. Which is not found to be true of any place whatsoever.

The theory is therefore untenable, but it cannot be denied that dew does exert a powerful influence in the production of malaria, although it is not the active principle.

41. Another theory, that carburetted hydrogen gas is the active agent, has been recently advocated by M. Boussingault. He detected carbon in the dew collected over the marshes of Ain, and the lagoons of Cartago in the valley of the river Cauca. After sunset he exposed watch glasses to the air of the marshes, and collected the falling dew, which he tested by pure sulphuric acid; it yielded a trace of carbonaceous matter. He found hydrogen in the same situation, and came to the conclusion that the carbon existed as carburetted hydrogen. This discovery by direct examination is worthy of all praise, and removes the reproach, from the analytic art, of being unable to detect minute adulterations in the air. But it is no more than a piece of admirable manipulation. No one who has visited a marsh has failed to witness the evolution of carburetted hydrogen: it is constantly taking place.

This gas is one of the products of the putrefactive fermentation of vegetable matters. It will, therefore, be met wherever that process is taking place. But the conditions which increase the unhealthiness of particular localities do not contribute to the increase of the gas. The most dangerous sites are on the sea-coast, and where sea water finds access to marshes. These circumstances, which augment, and even produce malaria, (29, 30, 30,) are in no way concerned in the development of carburetted hydrogen gas.

42. Numerous other doctrines have been advanced in this matter. Hypothetical germs of every shape and character imaginable, of inconsistent properties, or possessing the power of ingenious accommodation to the wants of the case, have been proposed by learned doctors. Some have endowed them with phases of good and evil. Others pass them through cycles of transformation, like the locust appearing suddenly and destroying with voracity, and disappearing without warning, and burying themselves for years in the inactive form of the chrysalis. To Lancisci we are indebted for the destruction of the theory, which attributed malaria to the action of insects. Carbonic acid is too diffusible to rest on the surface of marshes: this is true of all uncombined gases. Moscati found no difference in the proportion of carbonic acid existing in a malarious and healthy site.

PROPOSITION IV.

The properties of malaria are fully recognised by the profession.

43. It prevails usually in the autumnal months, corresponding to the fall of the leaf. Frost, and low temperatures destroy malaria. The summer is commonly free from it.

44. Night and morning dews appear to be the vehicle of the poison. It has always been recognised as existing with humidity in the air. The sultriness, complained of in malarious districts, is due to the action of moisture arresting the insensible perspiration of the body, and thereby destroying the natural means of reducing its temperature.

45. Malaria arises from muddy low lands, rather than extensive surfaces of water. The heat of the sun is reflected in a great degree from water, but the exposed beds of rivers and ponds absorb nearly every ray that falls upon them. Water does not transmit heat downwards, therefore the action of temperature upon the earth it covers is arrested to

a great extent; and the process of vegetable decomposition, so far as heat is concerned, is impeded rather than advanced. It is therefore the sides, and shores of rivers, and the sea, that throw off malaria.

46. Elevated positions are free from the noxious body. Hence, a retreat into the upper rooms of a house has been known to secure the inmates. It exists only close to the source, and does not diffuse itself to any distance, except horizontally, or up the side of a hill with a gradual ascent. The wind when cooler than the air, by condensing the vapour over marshes, may carry it to a limited distance.

47. The rays of the sun, or in other words the higher capacity for moisture created by them, disperses malaria, by causing the moisture with which it is combined, to be diffused into the air. The direct action of light may, however, influence the destruction of this agent.

48. A grove, or other collection of trees, existing between the source of the poison and human habitations, is said to be a secure protection. They act by absorbing the watery vapour, and thereby decomposing the malaria.

49. A high wall, by hindering the poison from passing over, is also a valuable protection.

50. Fire destroys malaria.

51. The first symptoms of malarious fevers are, dryness of the skin, diminution of urine, bilious and other congestions, and nervous prostration.

52. Cleanliness, irrigation, the cultivation of swampy lands, the annual destruction by fire of marsh vegetation, and free ditching are known to diminish the sources of malaria. The cutting off of the sea, from marshes, is an invaluable preservative.

53. Chlorine, and dryness of the atmosphere destroys malaria.

PROPOSITION V.

Sulphuretted hydrogen is the active agent, in the production of those forms of malarious fevers met on the sea-coast, and the diseases belonging to the same class found inland.

54. Sulphuretted hydrogen has been discovered on the most deadly coasts. It is produced in marshes where sulphates exist either in the vegetable matter, water, or soil. The destruction of the sources of the gas, by the exclusion of the sea, has annihilated the fatal malaria of some of the Italian marshes and given health to the pestiferous town of Viareggio. The inhabitants near the basins of Motrone, Perotto, Montignosso, and Tonfalo have by the same precautions rescued themselves from these diseases. The same is true of Central America. In many of the above cases, the marshes still exist, and the fresh water lying over them is occasionally let off by sluices, and folding doors, so that carburetted hydrogen is generated, but not sulphuretted hydrogen gas.

55. The form in which sulphur exists in malaria is a matter of less consequence. It most probably forms one of the components of an organic body, containing carbon, hydrogen, sulphur and water. The reasons which induce me to believe in its organic form are various. They are as follows:

(*a*) The property of diffusion common to gases, belongs also to sulphuretted hydrogen. It is, therefore impossible, that the gas thrown out by a marsh can rest upon its surface, but must be carried at once into the surrounding atmosphere. The presence of water in the air would not destroy the diffusibility of the gas, as has been supposed in the case of carburetted hydrogen, by Dr. Faust, (No. 11, *Am. Journ. Med. Sciences*,) unless a chemical union took place between them. For water, containing a gas in solution, must transmit it by exosmose into the air, until the latter contains as much as the former. Nor would the existence of a fog destroy the diffusiveness of the gas evolved from a marsh.

(*b*) The quantity of gas in the air, would seldom be sufficiently large to produce dangerous effects, if it were allowed to diffuse itself as fast as it was generated.

(*c*) The greatest bulk of gas is given off during the heat of the day, and that period should be the most dangerous, whereas it is known not to be so. But an organic compound containing water would of necessity cease to exist if the water lost its form and was diffused by the agency of heat. (*See Section* 47.)

(*d*) Moscati, M. Rigaud de l'Isle, and Boussingault, discovered minute flocks, in the dew collected over malarious places. The last of these experimenters concluded that the flocks were the poisonous particles, and that they were organic. Rigaud de l'Isle found that nitrate of silver afforded with the dew of the marshes of Languedoc, a precipitate which became purple. Moscati proposed the use of a veil, as a preventive against infection from malaria, by the exclusion of the flocks. These organic particles are subject to decomposition, and then yield an offensive odour. The readiness, with which they run into a state of decay, is exceedingly great.

(*e*) There is but one point which appears to be opposed to the doctrine of the organic nature of malaria. It is, the rapidity with which it yields its sulphuretted hydrogen to silver, so as to be almost spontaneously decomposable. The compound should, however, possess but little chemical cohesion, for it is evident, that, in its action on the human frame, the sulphuretted hydrogen is the active agent, and probably separates itself from the other components, as soon as it reaches the circulation.

56. The agents which decompose sulphuretted hydrogen are also inimical to malaria. Fire is of this number, for by means of it the gas is converted, in the open air, into sulphurous acid and water. Chlorine destroys both malaria and sulphuretted hydrogen, the latter by combining with its hydrogen and precipitating the inert element sulphur. The value of chlorine has been proved both in the American and British squadrons.

57. The existence of trees, by decomposing the organic compound, and appropriating its water, is calculated to destroy malaria.

58. Its weight, and the readiness with which water may be separated from it, preclude its rising to any altitude in the atmosphere.

59. It is produced in the autumnal months; because then, the amount of moisture, the coolness of the nights over the temperature of the days, and the fresh deposition of leaves, furnish the most abundant materials for the formation of the organic compound.

60. The poisonous effects of sulphuretted hydrogen are too well known to require comment. There is no agent, which marshes evolve, that is so destructive to life. Messrs. Thenard and Dupuytren killed birds in an atmosphere containing 1-1500th part of the gas. Nysten found that it was absorbed at once by the blood. Two or three cubic inches caused immediate death when injected into a vein, the cavity of the chest, or the cellular tissue of a dog. The same authority with Lebkuchner, and Chaussier found that it was absorbed through the healthy skin, and produced dangerous effects. The gas is a narcotic poison, prostrating the nervous system, and destroying muscular energy. In small quantities it produces colic, and internal congestions.

61. Sulphuretted hydrogen is thrown off from the healthy skin, along with the insensible perspiration. This may be tested by wearing a prepared coin. Negroes throw off a larger quantity, than white persons.

To arrest this discharge, or introduce into the system a quantity of the same deleterious gas, must lead to disease. When miasm is inhaled, the latter condition is produced.

Watery vapour saturating a high temperature, by putting a stop to insensible perspiration does not arrest the discharge of sulphuretted hydrogen necessarily. Moreover, the kidneys are known to act vicariously for the skin, as far as the discharge of water is concerned.

But the presence of sulphuretted hydrogen in the system, cannot be obviated by any vicarious action; for it does not form an ingredient of the blood; but is an excrement thrown out by the skin, after having been elaborated by it on the spot, and without ever entering the circulation. It must, therefore, produce a series of morbid results, before it escapes from the body, which are, in our theory, the symptoms of the diseases known as bilious, yellow, and jungle fever, or their milder forms.

Liebig states, that sulphuretted hydrogen produces immediate decomposition of the blood.

62. It may be a confirmation of the present theory with some persons, to know, that the inhabitants of Italy have long attributed malaria to sulphurous exhalations.

63. Persons who have been long resident in swampy regions, acquire the habit of resisting the action of malaria. But they are without confirmed health. Negroes are less subject to disease from malaria, than white persons, and especially strangers. From the amount of sulphuretted hydrogen that negroes exhale, it appears to me, that the exemption the natives of marshes finally acquire may be due to the establishment of an increased action by the skin, so that the poison is thrown out almost as rapidly as it is inhaled. Toxicologists give us instances of the consumption of ounces of opium and other narcotics, without fatal effects, by persons who have habituated themselves gradually to the use of the poison.

64. The two most efficient remedies in cases of bilious fever, contain chlorine. The nitro-muriatic acid bath owes all its activity to the absorption of chlorine by the skin. Calomel is a chloride of mercury, and is absorbed with the circulation, for it has been discovered in the blood by Schubarth and others.

Sulphuretted hydrogen is absorbed into the circulation, according to the evidence of Nysten, Chaussier, &c.

The existence of these two bodies in the blood cannot take place without a decomposition of sulphuretted hydrogen, the chlorine appropriating the hydrogen, and throwing down inert sulphur. This reaction is not conjectural, for in a case of poisoning related by Wibmer, where chlorine had been inhaled by a young man with the most serious results, the breathing of a little sulphuretted hydrogen, produced a rapid recovery. Nor was the recovery due to any action on the nervous system, for ammonia, which had been given before the sulphuretted hydrogen, did no good whatever.

The use of these remedies in malarious diseases is, therefore, a powerful argument in favour of the present doctrine.

The means discovered for the detection of sulphuretted hydrogen, places this important question in the hands of the profession—little skill or time is required to test the existence of the gas, during an endemic. By recording observations, made with so much ease, in the medical journals, the accuracy of the present doctrine will be proved or disproved. All that is demanded, on the part of the writer, is an unprejudiced examination, by *experiment*, of the question. It is not expected that other theories will be hastily discarded, but the judgment of the profession is confidently appealed to in the final decision of the point. With one practical remark I shall conclude this paper:—Sulphuretted hydrogen is not given off constantly by the same marsh; its quantity is seldom sufficiently great to blacken silver; the discoloration reaches a brownish golden colour, and seldom advances beyond it; this may be due to the presence of other substances besides sulphur, in the compound which acts upon silver.

[We append, at the request of the author, the following letter which he has addressed us.—*Editor.*]

DOCT. HAYS.

Dear Sir:—Unfortunately I was from home when your favour arrived, or it would have been answered at an earlier period. The instance of Boston,* which you adduce in opposition to my views, is new to me, but your remarks have directed my attention to a cause of discrepancy which may sometimes occur. The extensive bog lands of Ireland are free from malaria, whereas the fens of Lincolnshire, situated in a similar climate, are surcharged with it. In the former case, the absence of poisonous exhalations is probably due to the presence of *iron* in the subsoil.

* [Boston has very extensive marshes in its immediate vicinity, yet intermittent fever is unknown there.—*Ed.*

The iron may be in any form whatever, but if its electro-negative ingredient contain oxygen, it will be decomposed by the same force which overcomes the affinity of that substance in the sulphuric acid of the saline matters. This force has been spoken of hitherto, as due to the affinity of *carbon* for oxygen, but from the recent researches of Dr. Liebig it appears to be much more probable that the *hydrogen* of organic matter is the active body. The salt of iron suffering decomposition, there will be produced some new compound differing with the acid. If carbonate of iron be present and the oxygen be appropriated by the hydrogen of decaying matter, a carburet or plumbago will be formed. If a sulphate of iron be deoxidized the sulphuret results.

But the case which is immediately before us is:—where a sulphate of lime, magnesia, &c. is decomposed, and iron is likewise liberated from one of its compounds. Sulphuretted hydrogen is not in this instance formed *at all*, because the *free iron* exerts a more powerful affinity for sulphur than hydrogen does, and insoluble sulphuret of the metal results instead of a gas. A marsh in which this action takes place will therefore be free from malaria, like the Irish bogs, unless other agents exist in the production of the poison than those contemplated in my paper.

Iron is not the only substance that may bring about this result, for zinc and many other metals unite with sulphur with great readiness. It is, however, the most frequent and important substance which exists in bogs or marshes. The amount will influence the results, for there may be too small a quantity of iron present in some instances to combine with all the nascent sulphur. It is supposed by Liebig that the pyrites and zinc blende of coal owe their origin to the changes we have been considering.

I am glad that your letter has induced me to consider the negative of my proposition, that sulphuretted hydrogen exists in stagnant waters, because, the foregoing remarks may assist in pointing out the cause of the healthiness of some marshy lands, and also turn the attention of physicians to a means of remedying the production of sulphuretted hydrogen, in the streets of cities, &c., by freely distributing powdered iron ore as a preventive. Should it answer, the smallness of the expense, and the absence of smell, would constitute it a desirable substitute for the chloride of lime. The hæmatite ores would probably succeed best, but experiment alone can decide this question; and should opportunity serve, I shall examine the subject at an early period.

Whether the neighbourhood of Boston owes its exemption to the presence of a metal in the soil, or not, is worthy of investigation. But the quantity of water, the ingress of tides, winds, and other causes may in this instance destroy the malaria if formed. Amongst the localities enumerated, in which the influence of sea water is apparent, I beg to add that of Sheerness, England, the salt marshes of which are exceedingly insalubrious.

Allow me to remain, with the highest respect,

Yours truly, D. P. Gardner.

Prince Edward C. H., Dec. 5th, 1842

—*American Journal of Medical Science.*

Bellows-Murmur, indicative of Anæmia.—Dr. Cowan regards the bellows-murmur, heard in the superficial and deeper veins of the neck, as a practical indication of anæmia. When discoverable in the carotid, it presents the ordinary intermitting and blowing character. He observes, that another year's analysis confirms his statement that however loud the murmur in the cervical vessels, no analogous sound can be detected over the heart, apart from cases of valvular disease. In addition to what has been before stated as to the precautions necessary for its detection, it may be remarked, that in cases where the anæmia is partial, and the sound feeble, it is a good plan to lighten the pressure on the stethoscope gradually, and, at the last moment of contact, a soft brief murmur will be heard, evidently in the superficial veins. The lower diameter of the instrument should be small.

TO CORRESPONDENTS.

Medical Students' Association.—*X. C. renews his suggestion that a society of this kind should be formed. He thinks the present moment favourable, and that if the gentlemen who met together some time since, were to re-assemble, a useful association might be built up. We shall be glad to see such a society prudently managed; but we doubt whether it can exist under the influences that would be directed against it. The students who have the requisite spirit want the requisite influence; those having the requisite influence want the requisite spirit. Application and independance do not always go hand in hand. Besides, there is a great difficulty offered in some student's dread of losing a name for gentility. From an indefinite and very imperfect knowledge of that nice subject, some students remain in inaction in matters that no way concern it. They do "not know that it may not be not the thing." They remind one of the American lady who, to avoid what* might be *an indelicacy, kept the legs of her table in pantaloons. If many of our students* felt *that there was no truer gentility than in manliness, no better friend than in independance, we should not long be without a Student's Association.*

E. W. C,—*There is a law for forbidding druggists "to prescribe behind their counter," viz.* 55 *Geo.* 3, *c.* 194. *The penalty is* £20.

Medical Reform.—*We have carefully perused the able draft of a bill on this subject; we think it would be as well to delay its publication till the subject is under discussion in Parliament. It is in safe keeping.*

A. M.—X. Y. Z.—Mr. Best—Philo Justitia—A Lady—D. T. H.—A Constant Reader, Bath, *declined.*

X. X.—*We must beg to decline all such defamatory matter, with or without name.*

W.—*We are sorry we cannot publish this gentleman's long letter on the recent declaration of Sir James Graham that he is not satisfied that intramural interment is bad to public health. It only proves that the Right Hon. Bart. plainly knows nothing about the matter on which he expresses an opinion. If he be not satisfied of that, there are few things we imagine of which he is satisfied—beyond himself.*

THE MEDICAL TIMES.

Saturday, June 17, 1843.

——— Tarde quæ credita lædunt
Credimus.

A morning paper, the *Herald*, remarkable for the vigour with which it once opposed the New Poor-Law, came out during the last week with a declaration that the measure must now be regarded as "*un fait accompli*," and that all attempts at its repeal must be now considered as mere waste of labour. We shall not stop to enquire about the motives which induced an admission so inconsistent with former declarations, and so conveniently suited to present exigencies, but at once record our conviction that the remark, however originating, is well, (we had almost said) too well founded. Notwithstanding that the teachings of philosophy, the lessons of Christianity, the feelings of humanity, the swell of the passions, and the bias of the interests, have all been enlisted in battle array against what, when mildly described by its opponents, was called an accursed and fiendish measure, — notwithstanding that the multitudes met it to a man, in an antagonism as bitter as it seemed powerful, that it was the *cheval de bataille* of the popular tribune, the trump-card with the endangered House of Commons' man,—notwithstanding that the colossus of daily literature roared itself hoarse in the effort of agitating, exciting, sustaining, uniting, and directing all these different elements of warfare, the New Poor-Law, it must yet be confessed, has outlived, if not all the checks, certainly all the perils of opposition.

To speculate on the causes of this at one time unhoped-for result, would be a more useful, probably, than entertaining employment; but he who has looked at the course of events cannot have failed to have perceived that, in addition, first, to the tendency we have to give up in weariness a long and fruitlessly prosecuted suit, secondly, to the absorbing urgency of still more interesting public questions, and, thirdly, to the neutralizing power of the concessions by degrees extorted from the Poor-Law Commissioners,—the motor power that has most forced men into quietude, has been the growing feeling that the men who —known by whatever name—are elected by the rate-payers to take charge of the pauper population, cannot be safely trusted with a discretionary power over the healths, comforts, and well-being of those so made dependent on them. We advance the fact with reluctance and regret, but it is a fixed conviction we cannot hide—that our Boards of Guardians ought not to be trusted with the maintenance of the destitute poor, save under a rigid supervision. The law governing their distribution of relief may be made as comprehensive and stringent as any objector may please to wish it, but it never can be sufficiently so to ward off injustice from the poor. The Guardians paying—as they do—the rates they distribute, have a direct interest against the well-being of their wretched dependents, which recent proceedings in numerous parishes and unions shew that they are no way slack to consult, and all the laws that have been framed from the time of Draco downwards, if not supported by an enforcing authority with discretionary powers, would fail to secure the poor justice, from the numerous loopholes our loose interpretations of statutes open to us—and which must be infinitely increased with bodies which, like these Boards, possess a corporate character, act comparatively in secret, and have such countless, varied, and novel circumstances to adjudicate in. The Commissioners—at one time considered the great deformity of the new law —are thus turning out to be an essential requirement. In the increasing pressure of the times, in the universal mania of living up to income, and in the augmented selfishness characterizing our age, some such power—it is now felt by the friends of humanity—must be interposed between the poor who are to be supported, and their *Guardians*, whose interest it is, *not* to support them.

If we would ask for any further support for this view of the case, we have it in the treatment which the medical officers of unions have been obliged to submit to, from many of these self-saving rate-payers.

Linked together by the ties of benevolence on one side, and well-deserved gratitude on the other—it has been the singular fate of the medical men and the poor to be equally aggrieved by the action of the "amended" law. Whatever the character of its agency on our brethren, that—it may be safely predicated,—has been its action on the pauper population. The extracts we last week gave from the Commissioners' last report, exhibited in part the need of a superior check for the Guardians in their treatment of their medical officers. We now return, as we promised, to that document, and offer some further illustrations. Admissions such as these we now give from the very head-quarters of the law supporters, cannot be too highly rated for their importance, and call, in a voice that cannot be too early obeyed, for some better legislation in reference to the interests both of medical men and the poor.

Here is an indication of the temper of Guardians, and how far they would go, if allowed "to run alone:"—

With respect to the general remuneration of the medical officers, we have found recently a prevalent disposition to reduce their salaries, in common with those of the other Union officers. This disposition to reduce the salaries of the Union officers has been particularly manifested in Cornwall, Devonshire, Somersetshire, and some other of the western counties, The reason for the reduction of the salaries usually assigned by the Guardians has been the diminution in the prices of agricultural produce. We have considered it our duty, in most cases, to refuse our assent to the proposed reductions, partly on the grounds stated in our minute on the salaries of Union officers (Seven Annual Report, App. A, No. 4), and partly on the ground that the salaries of Union officers ought not to regulated by the temporary fluctuations in the prices of provision. *We have not observed that the Boards of Guardians proposed any augmentations of salary on account of temporary advances in those prices.*

In addition to this general reason, however, the Guardians, in the case of the medical officers, commonly alleged the increase of their remuneration in surgical and midwifery cases by the order of the Commissioners. We have, in general, resisted the disposition of the Guardians to reduce the remuneration of tho medical officers. *Indeed we think that in many parts of the country, instead of the salaries of the medical officers demanding reduction, their rates are too low to enable the medical officer, consistently with a fair remuneration for his labour and expenditure, to bestow upon his pauper patients the amount of care and medicines which the Guardians profess to ensure them by a medical order.* The parts of the country to which we particularly refer are the northern counties and Cornwall.

We are then furnished, as an exemplification of this, with the rates of medical remuneration in the three counties, Durham, Lancaster, and Cornwall. In the first and second of these the average rate is 1d. per head on the population of the union; in the third, $1\frac{1}{2}$! Some of these pay at the rate of $\frac{1}{4}$d.! The Commissioners, as a partial defence, or rather explanation, of these grossly inadequate terms, write thus:—

The comparative lowness in the rates of payment for the northern counties, indicated by the preceding table, is owing mainly to the fact that prior to the introduction of the Poor Law Amendment Act, little medical relief was given by the overseers, and that the practice of employing permanent parish doctors, paid by a salary, which was almost universal in the south had scarcely any existence.

Upon this point we may cite the following statement from a Report by Mr. Power on the Medical Relief in Lancashire and the West Riding of York dated 9th March, 1839:——

"Previously to the formation of Poor Law Unions, the state of the medical relief both in Lancashire and the West Riding of York, was very different from the state of medical relief under the old system in the South of England. The system of contracting, by a fixed salary, for attendance on the poor was rare, and when existing was usually productive of a very small salary to the medical man. The more common practice was for the township to incur bills for attendance on those paupers in whose favour the overseers or vestry granted an order. Both practices were sometimes found existing in different townships in the same Union; but I may that, with scarcely any exception through the whole district, the medical relief, of which any distinct account could be found in the township books, bore an extremely small proportion to the population, and to the general expenditure on the poor.

"This state of things may be attributed, in some degree, to circumstances favourably distinguishing the management of parochial affairs in the district, from the management existing previously to the Poor Law Amendment Act in the southern counties. Amongst such circumstauces are the following:—a close spirit of economy in relieving the poor on the part of the assistant overseers and vestries; a great degree of hardihood and independence in the mass of the people; the existence of numerous clubs and societies, providing against the contingency of sickness, and embarcing large numbers of the operative classes; and to these may be added a disposition on the part of the medical men to make moderate charges upon the township for attendance upon pauper patients, properly distinguishing between the latter and a more wealthy class of patients, and not presuming too far upon the competency of the township to supply the difference. Under these circumstances I have usually found that the practice of paying the bills of medical men, instead of contracting with them for attendance on the poor, has been attended with the least expense to the townships in this district.

"By referring to the tabular statements of the Unions formed in this district, your Board will see abundant proof of the foregoing remarks regarding the small cost of medical relief. Two of the more remarkable instances are the Chorlton-upon-Medlock and the West Derby Unions, containing each, at the time of inquiry, an estimated population of 60,000, in neither of which the medical expenses, distinguishable as such in the township books, exceeded £100. per annum."

Mr. Power adds,—

"It is remarkable that on the introduction of the new system, there has scarcely ever appeared to be any difference of opinion among the guardians as to the propriety of appointing district medical officers at certain fixed salaries; and the propriety of doing so has appeared to me to be felt chiefly upon the ground, that it would be desirable to introduce a more liberal dispensation of medical relief than existed heretofore."

We will add a similar passage from a Report of Sir J. Walsham, on the Medical Relief in Northumberland, Cumberland, Westmorland, and Durham, dated 1st Nov., 1839:

"The medical relief under the former management of my district constituted so insignificant a feature among the parochial disbursements, more especially in Northumberland and the northern division of Durham, that at the outset neither the guardians nor the assistant commissioners had any comprehensible data furnished by the experience of the past, upon which to calculate the future remuneration of medical officers. In point of fact, the medical relief to the poor (as administered by overseers and vestries, and when considered in a pecuniary sense and on a population basis) did not average throughout the north one-sixth of the cost at which, cæteris paribus, medical relief would have been estimated in the southern and midland counties."

The Commissioners conclude their notice of medical matters in these terms:—

Now the wide diversities in the existing rates of payment for medical officers of different Unions to which we have adverted, render it nearly impossible for us to introduce any uniform scale of salary or payment per case for the entire country. Moreover, not only do the existing rates of payment differ, but the voluntary arrangements made for the medical attendance on the poor are in some districts such as to relieve the union medical officers of a large part of their ordinary duties. Thus, in the mining districts of Cornwall and South Wales, there are well supported medical clubs for the working people; so in the manufacturing towns of Lancashire, and the West Riding of York, there are commonly large dispensaries maintained by voluntary subscriptions.

LONDON HOSPITALS.

During the last week, the hospitals have been undergoing a quiet revolution in their medical staff. Dr. Bright has ceased to be senior physician at Guy's, to be succeeded by Dr. Addison. Dr. Barlow and Dr. Rees have mounted into physicianships —Dr. Golding Bird into an "assistantcy." At St. Thomas's, Mr. M'Murdo succeeds, as a matter of course, Mr. Tyrrell: who is to succeed Mr. M'Murdo is said to be matter of more doubt. At Westminster, all is bustle, confusion, and excitement. Mr. Guthrie has vacated his surgeonship for an honorary distinction, and thereby entails on the hospital the boon of Mr. Hale Thompson as its operator-general. The vacant assistant-surgeonship is, of course, *decreed* to Mr. C. Guthrie, although two gentlemen, Mr. B. Phillips (a man eminently well calculated for the office) and Mr. Alcock, have offered themselves, with some view, we presume, to a subsequent election—while a third gentleman, Mr. Lucas (who, we are informed, has no connection with the medical firm advertising under that name) has thought it worth his while to advertise his existence in connexion with a post, the very aspiring to which must be a desirable distinction, where others do not happen to abound.

Truth to say, these domestic arrangements of our metropolitan hospitals are matter of as melancholy reflections to us, as they would be for doleful forebodings to the patients, if they understood what was about being done with them. Medical Science must be a generous, obstinate-hearted being, if, with all the rebuffs and ill-treatment she receives on all sides, she persist in remaining and flourishing among us.

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

French.—*Report to the council-general of Hospitals on the employment of Hydropathy in the treatment of Diseases of the Skin, as adopted at the Hospital St. Louis.* By M. Devergie, Surgeon to the above institution.

In the early part of the year 1841, Dr. Wertheim, having observed the beneficial effects of hydropathy at Grœfenberg, under the immediate superintendence of its author Priessnitz, was anxious to try its efficacy in diseases of the skin. He applied to my colleague M. Gibert, who placed several patients under his care. Arrangements were made at the hospital for

the administration of baths and *douches*, and their management confided to Dr. Wertheim, on the 1st of July, 1841.

In the month of August, M. Wertheim requested my permission to experimentalize upon some patients affected with diseases of the skin, more especially those of a squamous character. With a view of granting this method a fair trial, I acceded to his desire, and placed under his care several individuals labouring under different forms of this disease. Before I describe the results of this mode of treatment in these cases, I will say a few words upon the system itself.

Founded and developed by Priessnitz, a simple peasant, the fundamental principle of this system seems to be, that *the essence of diseases consists in an accumulation of substances unfit for nutrition, and that the elimination of these substances re-establishes the harmony of action of the organs which is called health.* To favour this elimination by provoking perspiration, and to re-establish the functions of the skin which are most frequently deranged, is the object of the means employed by Priessnitz. With this view, he generalises or localises his sudorific agents, according as he wishes to act upon the whole or upon a part of the economy. But as the promotion of perspiration alone might weaken the skin and the lymphathic system, he endeavours after the sweating to give to the skin its natural energy, by means of cold baths and cold *douches*.

Excitation of the sweat.—First mode. To make the patient lie naked in bed, upon the back, his legs extended, and the arms applied against the sides of the body. To swathe him in a blanket, leaving only the face exposed to the air; over this covering, to place a feather-bed which is fastened on each side. To enjoin the most perfect immobility. *Second mode.* To envelope the body in a sheet soaked in cold water, around this sheet a blanket, then a feather bed. These two plans may be called, the dry mode, and the wet mode. The dry mode of sweating is less energetic than the wet mode; the latter is employed only in those subjects who perspire with difficulty. In the course of half an hour, one hour, or two hours at most, sweating shows itself, the face becomes red and flushed, but the pulse does not appear to be remarkably accelerated. When the perspiration has continued for about half an hour, a window is to be opened over the head of the patient, whether the weather be dry or wet, hot or cold. At the same time the patient is to drink freely of cold water, and, under the influence of these means, the sweating is greatly augmented. The patient should be left in this state of perspiration from one, to five or six hours, according to the strength of the individual. The mean duration is from two to three hours. When the sweating period has elapsed, the shoes and stockings are to be put on, the blanket loosened about the feet, and the patient made to walk to an adjoining place, where the baths and *douches* are applied; or else he is carried there on a litter. Then, being quickly divested of the blanket, and having wetted the face with cold water, he is made to plunge into a cold bath at a temperature of 6 or 8 degs. (cent.), or into water raised to 12 or 14 degs. (cent.), at the most. This tepid bath is intended to habituate the individual to the use of cold water. During the time of immersion in the cold water, the patient should move about, rub himself, and swim if the space will allow In other cases, the patient is placed in a bathing-tub, in which the water is but 8 or 9 inches in depth, when he is to wet himself and rub indiscriminately the whole surface of the body. He is also to receive in this bath a *douche* of cold water. On quitting it, he is to have a shower-bath over the whole surface of the body. He should then rub himself dry and quickly dress himself, take a sharp walk, and, if he is able, go through some gymnastic exercises. Shortly afterwards, he is to take some light food, and to drink freely of cold water throughout the day.

In the application of hydropathy, local baths are frequently used to the hips, the feet, the arms, and even the head; in all these partial baths, which are used cold, continued frictions are employed upon the parts bathed in the water, and artificial means are invariably adopted before-hand to raise the temperature of the parts to be bathed, whether it be by exercise, or by woollen bands soaked in water. There is a species of heating or exciting fomentation which, according to hydropathists, has a very powerful action on the skin, producing all the stimulating effects of a blister, vesication excepted. This is performed by wetted compresses, wrung out with the greatest possible force, which, being applied evenly over the diseased surface, are covered with a very dry cloth, tightly drawn around, by which a great development of heat with eruption on the skin is produced. With this external treatment is combined a severe regimen: a diet consisting principally of milk, some kinds of roast meat, vegetable and fruits: warm clothing, exercise, retiring to rest in good hours, rising early in the morning, and the exclusion of all those social conditions which might excite the imagination or call the moral affections into active play.

Such are the precepts and practice of hydropathy. Such was precisely the mode of treatment adopted with the patients whose cases I will now briefly narrate. Eleven patients were subjected to this treatment; nine were affected with diseases of the skin, and two with chronic rheumatism. Patients labouring under the same class of disease were selected, with a view of comparing the results of this treatment in the different varieties of the affection, whether viewed in regard to its duration, or to the causes which had given it birth. All the patients belonged to that class of affections called *squamous.* They comprised the varieties of *psoriasis* and *lepra.* Of these nine patients, the affection was recent in three, and of long standing in the other six. In the old-standing cases, the disease had existed, in one for eleven years, in two for ten years, in one for nine years, in one for five years and a half, and in the other for two years; all these patients had been subjected to various kinds of treatment, before commencing the hydropathic system; some had also been treated for itch and different forms of venereal disease which they had contracted. In some the general health had become affected, whether from the active treatment which they had undergone, or from their prolonged stay in the hospital. The three other patients have, on the contrary, been subjected to the hydropathic system since their first entrance into the hospital, so that any want of success cannot be attributed in them to the mode of treatment adopted anterior to the employment of this agent.

As to the results obtained, they may be classified under two important heads: 1st, The general health of the patients treated; 2d, The state of the disease with which they were affected.

In one patient the general health appeared to suffer without any corresponding improvement in the disease of the skin. At the end of three months, it was necessary in this case to suspend the hydropathic system; and after an interval of six weeks, during which the patient took a strengthening diet, the disease was cured by the external employment of tar. The affection in this man had existed for five years and a half. In all the other individuals, there had either arisen but a very slight attack of diarrhea, or, on the contrary, the general health has been remarkably ameliorated; they have, for the most part, regained their flesh, an excellent appetite, and in one individual who had been altogether thirteen months in the hospital, in whom the general health was greatly deteriorated, and who had become affected with an obstinate scrofulous ophthalmia, the influence of hydropathy was most remarkable in bringing about the perfect re-establishment of the health. I may here mention the case of a child thirteen years of age, and of a very weakly constitution, in whom an attack of croup supervened soon after his entrance into the hospital, and who recovered with great difficulty. This child was subjected to the hydropathic treatment, and left the hospital six weeks afterwards in a perfect state of health. With respect to the results obtained by this treatment in diseases of the skin, I may in the first place declare that in no case has it aggravated them; that three of the patients only have left the hospital cured by this treatment; that one of them had a relapse three weeks afterwards; this was one of the patients who had not been previously treated in the hospital; the affection had existed in him for ten years. A child was completely cured in seven weeks. Another in four months and a half. In the other patients, I was obliged to suspend the hydropathic treatment; it either produced no good effect at all, or else it modified the disease only without curing it. This modification, however, appeared to be beneficial; for, in the majority of cases, I was enabled to cure the affection by means which, before the employment of the hydropathic method, had been attended by no good result. As to the two patients affected with chronic rheumatism, they left the hospital with a very marked amelioration in their condition.

I cannot terminate these remarks without repeating the fact, that the hydropathic method very frequently does not produce its effects till after a long lapse of time; thus several of our patients were treated for seven or eight months in succession; and generally speaking it is better, both for the interest of the patient and for that of the hospital, not to have recourse to this system until other measures have failed.

We may sum up by observing: that the hydropathic method does not appear likely to injure the general health. It frequently produces a remarkable amelioration in it. When applied to the treatment of squamous affections of the skin, it is sometimes attended with success; and when it does not remove the disease, it may, under certain conditions, produce a beneficial modification in the state of the skin. Whether the cures which it performs are of a permanent character, is a question which experience alone can solve. Hydropathy must then be regarded as a new resource in the treatment of cutaneous diseases, and we would suggest that every encouragement should be given to the trials which have been undertaken on this subject, and that the administration should even extend the means which have been already placed at the disposal of the physicians of this hospital.

[M. Devergie then pays a just tribute to the talent and invincible perseverance of Dr. Wertheim, to whom the carrying out of the details of this system are confided. Having also given the particulars of each of the above cases (which we shall not here repeat,) he proceeds as follows]

In general, it is advisable to prepare the patient for this treatment. With this object, he is ordered a nourishing diet, but less in quantity and less succulent than what he has been used to. He is subjected, for four or five days, to the use of water; he is ordered to take exercise without fatiguing himself, and prohibited all mental labour or excitement. He is then to commence the sweating process (by the dry method), but not to drink cold water before a copious perspiration shows itself. When the sweating-stage has elapsed, the patient is not to be put into a tub *filled* with cold water. The tub should contain a layer of water of but 10 or 12 inches in depth; the face and head are to be wetted with cold water at the moment of entering; he is then to sit down in the tub, and the water is to be thrown over his body, at the same time that he wets the chest and arms, and rubs them with rapidity. On administering the first bath, it is better to give it tepid, that is to say, at a temperature of 15 deg. (cent.), especially when the season is cold. After staying from four to five minutes in the water, and using constant frictions, the patient is to leave the tub and be placed for some seconds under a shower-bath, after which he is to dry himself rapidly, dress himself, and take exercise; then he may breakfast. An important point to be attended to during the bath and the *douche*, is that of keeping in *motion* during their administration. If the patient were to remain still, he would quickly perceive the impression of the cold. It is remarkable how easily individuals bear this abrupt immersion in cold water while in a state of perspiration. Only one of our patients perceived on the first day some tendency to syncope; but fear had probably contributed to this, for the next day he was not at all inconvenienced. The sweating and immersion in water should be repeated every morning. Now and then we allow the patient a day of repose or intermission. The amelioration in the general health of these patients is extraordinary. We see them regain their appetite, their flesh, their strength: and these phenomena have been so marked in the cases under our care, that we cannot hesitate to believe but that hydropathy would exert a most beneficial influence in some diseases, especially in chronic affections of the digestive canal. Hydropathy cannot be employed at all seasons: thus it should be suspended during the four months of winter. At least it should not be commenced during this period of the year; it might perhaps be continued in those patients who had for some time been habituated to it. Lastly, this system has succeeded, in the patients under our care, but after a long lapse of time; yet the inveterate nature of the cutaneous diseases to which it has been applied, should perhaps be taken into account.

The following were the local signs presented under this treatment in squamous diseases: the scales in *psoriasis* and *lepra* became moistened by the perspiration and detached. The diseased skin assumed at first a bright red tint, then a violet one. The patches become gradually depressed and widened; so that after a fortnight's treatment, for instance, one would be inclined to regard the disease as having progressed for the worse; but such is not the case. The skin now becomes less thick; it becomes gradually more even; at the same time a whitish line or circle is formed around the red parts of the skin, similar to what we observe in the treatment of these affections by the tar ointment, or by other applications; lastly, the skin regains its natural colour at the same time that it becomes smooth, unctuous, perspirable and remarkably supple. We may conceive, from these results, that besides the cases which I have enumerated, patients affected with *ichthyosis* might be, if not cured so as to be protected from all relapse (for this disease when once developed is scarcely ever radically cured), at least freed from it for a certain time by the agency of this means. In two cases of *prurigo* which had existed for some years in two young females, a cure was accomplished by this system, but in one of them a relapse took place. We find some squamous affections of the skin which do not seem to be benefitted by the application of the tar ointment, or by the administration of arsenical and antimonial preparations. Might not hydropathy in this state of the skin bring about a beneficial modification which would render the cure more easy by the above agents? Such I believe to be the fact, and in the cases which I have cited, several instances may be found to prove the truth of this assertion. I always feel a repugnance in giving arsenical preparations to children. They are in general supported with difficulty at this period of life. There are many adults in whom the state of the digestive passages does not admit of their administration, nor even of that of antimonial preparations. Tar is often equally powerless in bringing about a cure in these patients. Hydropathy will, I believe, be a powerful resource in these species of cases, cases which prove rebellious to ordinary means. In fine, without pretending to give to this method an extraordinary value in the treatment of diseases of the skin, I do not hesitate to consider it as an agent possessing great advantages, whether it succeed in curing the disease, or merely in preparing for a cure, or, lastly, whether it be confined to ameliorating the general health.

Such is the result to which I have been led by a consideration of the above facts. These experiments are not perhaps sufficiently extended to authorize a decided opinion upon the absolute value of this method; but I think that the trials already made at the *Hospital St. Louis* should encourage further experiments, and thus enable us ultimately to give a positive judgment in its regard.—*Gaz. Med. de Paris.*

CASE OF ASPHYXIA FROM THE PRESENCE OF TUBERCLES IN THE LUNGS.

By ALEX. BLYTH, Esq., Chatham.

W. B., aged 23, a robust young man of sanguine temperament, and by trade a labourer, applied for medical advice on the 9th of April last. He states, that previous to his present illness, he has enjoyed good health. The past history of his family could not be ascertained.

History of Present Disease.—About a week since felt a dull pain in the right side, difficulty of breathing and violent cough, accompanied by expectoration of thin mucus; the cough was most troublesome during the night. These symptoms were accompanied by a sensation of chilliness and languor. Could not assign any cause for his present illness.

Present State.—He now presents a full habit of body, and the skin is moistened with cold perspiration. Countenance anxious; face flushed; the lips of a livid appearance. He appears nervous, and has considerable difficulty in articulating some words—which is not natural to him. Tongue dry, with a thin coat of white matter on either side of the median line; its mucous coat presenting in many places transverse fissures. Appetite very deficient; the digestive organs in other respects appear to be healthy. On inspecting the chest, no defect in physical conformation could be detected; the respiration was weak and laborious. The chest yielded a remarkably dull sound over its entire extent on percussion. The respiratory murmur inaudible in the clavicular and subclavicular regions, and very weak in other situations. No rhonchi could be detected on either side of the chest. Heart's action weak in left mammary region, but could be heard in both clavicular regions. Sound of voice weak. Cough violent during the night—almost free from this during the day; its character is harsh and dry. Pulse 118, small and quick.

Treatment.—10 o'clock. A.M. Haust. Emetic. s.s., Balneum. 4 P. M., V.S^{tio}. ad ℥xij. Mist. Antim. ℥i. every 4 hours.

April 10th. No pain whatever; in other respects continues same as yesterday. At 4 P. M. the difficulty of breathing increased, and the cheeks became livid. Repet. V.S^{tio}. ad ℥xij.: Emp. Lyttæ Sterno. ℞—Hydrarg Chloridi. gr. ij.; Pulv. Opii. gr. $\frac{1}{4}$. M. To be taken 2 hours after each dose of the mixture.

From this time to within a few days of death no alteration in the symptoms presented themselves; the impeded respiration and cough, with a dusky or livid appearance of the cheek, were still the chief morbid phenomena. Little expectoration followed the severe paroxysms of bronchial cough; it consisted of thin mucus. Twice only during the course of the disease, traces of softened tubercular matter were detected by the microscope.

The protochloride of mercury administered, produced salivation in 36 hours—18 grains having been taken. Subsequently to this, the decoctum senegæ was prescribed, and at a still later period of the disease, sulphuric ether, ammonia, and other stimulants. On the 1st of June the difficulty of breathing greatly increased, and he expired on the 2d at 6 o'clock, P. M., remaining sensible to the last.

Autopsy.—The integument covering the forehead was of a light purple colour, and that portion of it covering the anterior portion of the thorax and thighs, presented patches of a similar appearance. The muscular system was well developed, particularly over the walls of the thorax.

Head.—On dividing the integuments, the cells of the subjacent cellular membrane were found filled with dark coloured blood. About ℥ss. of a similar fluid escaped on removing the skull cap; the brain, with its membranes, were healthy, with the exception of the pia mater, which appeared more vascular than usual.

Thorax.—Infra-clavicular regions depressed. The chest emitted a dull sound over its entire extent on percussion. The sternum being removed, the lungs were observed to occupy the whole interior of the chest; tubercular matter was deposited in both lungs, their lobes being studded thickly with tubercles of various sizes; very few had advanced to the stage of softening. Heart small; walls pale and flabby; valves normal.

Abdomen.—Gall-bladder remarkably pale, empty, and resembling the stomach in colour. The other abdominal viscera were healthy.

Remarks.—In the above case, death appears to have been produced by the circulation of carbonized blood through the system,—the decarbonization of the vital fluid having been prevented by the mechanical pressure of tubercles on the walls of the air-cells. Their size was thus greatly diminished. A very remarkable feature in the above case was the apparent sudden deposition of the tubercular matter. This supposition is warranted by the sudden accession of impeded respiration supervening

on a state of perfect health, and also by the greater number of the tubercles being of the same size.

WESTMINSTER HOSPITAL.

AMPUTATION OF THE LEG,

AND

EXTIRPATION OF A TUMOR FROM THE NECK.

Very recently, two capital operations were performed at this hospital by Messrs. Guthrie and Thomson. Mr. Guthrie amputated the leg of a female who had received a gun-shot wound, when following the army at Vittoria. The wound was still open and discharging, and as the muscles of the leg and foot had become so contracted as to render the member useless, amputation was had recourse to. Mr. Guthrie amputated below the knee, and by the flap operation. No tournequet was applied, but compression carefully made upon the femoral artery, under Poupart's ligament. The limb was neatly and expeditiously amputated, and care having been taken to remove the projecting crest of the tibia, the arteries were then secured,—the edges of the wound stitched, strapped, and bandaged, and in a few minutes the Trojan was carried out with a smile on her countenance, as if nothing had happened.

Mr. Thomson then introduced into the theatre a female patient, with a tumor about the size of a lemon, projecting from the left side of the neck, and over the site of the carotid artery. The tumor was moveable, free of pain, and had an obscure elastic feel. It was evidently an encysted tumor, but whether of the atheromatous or steatomatous description, could hardly be made out. Mr. Thomson conceived it to be atheromatous, an opinion which dissection completely verified. The patient being seated on a low chair, Mr. Thomson, with one sweep of the scalpal, completely unbridled the tumor; he then dissected the integuments to each side, and finding the base of the tumor passing, in part, behind the sterno-cleido-mastoid muscle, he at once opened the sac, pressed out the white pulpy matter, of which the atheromatous tumor was composed—pulled the empty sac then forcibly upwards, and easily and completely dissected it from its deepest attachments. No ligature was required. The edges of the wound were brought accurately together, and retained by stitches and adhesive plaster.

MEDICO-BOTANICAL SOCIETY.

June 8th

Dr. Sigmond, in the Chair.

A communication by Dr. Houlton, "On Roots and Leaves," in continuation of his paper on the preservation of roots, read at a previous meeting, was read. Dr. Houlton observes, that on further consideration he is of opinion, that all true roots of herbaceous plants should be dried in their entire state, and that probably bulbs and cerine might be dried in the same way, if the rudiments of the new plants with which they are furnished, be first removed. When roots are thus dried, their juices are not exposed to the action of the atmosphere, which is the case when they are previously sliced, and for the samo reason, Dr. Houlton employs the carefully dried and pulverized medicinal leaf, in preference to extracts prepared from it. The leaves should be kept in a well-stoppered bottle, and secluded from the light, and only powdered in small quantities at a time, according to the consumption of the practice.

A paper by Professor Tenore, of Naples, "on the Candidea, a new genus in the natural order, Syriantheracea," was then read. The Candidea, named after a celebrated Neapolitan naturalist, is a perennial herbaceous plant; the root consists of a fasciculus of fusiform tubers, the stem is cylindrical, ramose, and in the form of a cyme; the leaves are alternate, and spirally arranged, dentate, lanceolate, and rugose; the inflorescence is disposed in corymbs; it flowers in October; the seeds mature slowly. The plant is a native of Senegal.

MEDICO-CHIRURGICAL SOCIETY.

Tuesday.

Mr. Stanley in the Chair.

The first paper read was "On the structure of adventitious tissues by Dr. Hodgkin." The object was to point out the microscopic characters, and connect them with the type of compound serous cysts which the author had drawn attention to in a former paper, addressed to the Society some years since. Without stopping to detail the microscopic phenomena which must be seen to be completely understood, it will be sufficient to give the conclusions which the author desired to draw.

1st. That continued observation has confirmed the constant presence of the type of compound serous cysts in a class of adventitious structures, which comprehends the whole family of cancerous diseases. The author had found it not only in man but also in the inferior animals, as for example the horse, the ox, the cat, and different species of birds, and stated that several practised observers had fully confirmed his conclusions; and he added that the late Professor Delpech, and the present Professor Rokitanski, had personally informed him that they had independently been led to take similar views.

2d. That the microscopic examination of these tissues, though extremely interesting, did not furnish perfectly conclusive tests of any particular form of adventitious structure to which a specimen may belong, but that it demonstrated the application of the nucleated cell theory, whilst it was fatal to that of cancerous matter being found in the blood, and eliminated at the spots at which the tumours become manifest. It therefore furnished an important argument in favour of operation, though other practical considerations require to be attended to, before operation is decided on.

3d. That to have a complete view of the mode of production of these structures, we must combine the cell theory of Schwann and Muller, the coagulation principle which the author had previously suggested, and the process of organization investigated by Kiernan—three stages of development that appear to occur in the order in which they have just been enumerated'; and that none of the phenomena, taken singly, is an adequate test of malignancy, which, as stated in his first paper, must be regarded as the sum of several characters.

4th. That chemical analysis, though extremely important and interesting, affords an imperfect and inadequate criterion, as the principles concerned may vary, or be changed in the progress of development.

5th. That in operating for the removal of a tumour of this class, it is extremely important to leave behind none of those minute cysts which often form granules in the surrounding cellular membrane, though it may appear to be in other respects perfectly healthy. This appears to be a mode of extension of the disease independent of inflammation.

6th. That experience teaches us that the infiltrated form of these diseases occurs in the structures in the neighbourhood of the purely adventitious growth when these structures have been the seat of inflammation; and that the chances of success from operation are consequently infinitely diminished, when such surrounding inflammation has taken place. The presence of the peculiar matter of the disease, in the interior of vessels, appears to be one of the modes in which infiltration, the result of inflammation; exhibits itself, and is therefore not a valid argument in favor of the pre-existence of such matter in the circulating blood.

A few observations "on the mode of ossification of encysted tumours by Mr. Dalrymple," drew forth some interest; and the contents of a letter addressed to the president by Mr. Lloyd caused some amusement. Mr. Lloyd's paper related to spermatozoa in the fluid of hydrocele, which had been the subject of a paper by Mr. Liston at a previous meeting. Some of the spermatozoa lived three hours after they were placed under the microscope, and the agonies of their dying movements were told in such a manner as to create considerable laughter from all present. Two members present suggested, whether it was not probable that the authors of the papers had punctured unknowingly the testicles, which would account for the spermatozoa in the fluid of hydrocele, and urged that the existence of blood-dises in Mr. Lloyd's case, as recorded by himself, rendered such an event more than probable. The president thought, that if the testicles in the cases alluded to, were in their place, it would be difficult to injure them in tapping for hydrocele, which did not appear satisfactory to the catechists.

THE EDINBURGH MESMERIC OPERATION.

To the Editor of the 'Medical Times.'

Sir,—In your Journal of the 13th ult., I find a note from Mr. Robert Cox relative to the "Extract from a Minute of a Meeting of Medical and other Gentlemen," which requires an observation or two from me. In the note, I am represented as having "extracted a tooth from William Gill, whom I had just thrown into a mesmeric sleep." This is incorrect: Mr. Nasmyth, Surgeon-Dentist, extracted the tooth, as stated in the minutes inserted in your Journal of 6th May last.

I made it a condition, on my part, before the committee assembled, that I should be furnished with a copy of the Minutes of Experiments, and as to the "Conditions of the Meeting," I have not yet received a copy of them; but I beg to state, that I rigidly adhered to the conditions adopted to the very letter, although repeatedly tempted to break the silence imposed on me during the experiments, and at the same time, I deeply regretted that the committee declined to adopt, or *even read*, the suggestions I had drawn up, and offered to their notice, in a liberal spirit of enquiry. Had they listened to the proposals, I am inclined to believe they would have continued their investigations longer, and with the same interest with which they commenced the enquiry.

I am, Sir,
Your obliged Servant,
E. T. CRAIG.

Edinburgh, June 13th, 1843.

PERISCOPE OF THE WEEK.

Annales de Chimie et de Physique, London and Edinburgh Medical Journal; American Journal of Medical Science; Lancet; L'Experience; &c.

Adulteration of Sulphate of Potass.—Two or three cases have been recently published in the medical journals of the continent, in which the sulphate of potass, prescribed to nursing women, has proved fatal, after causing a singular series of symptoms. M. Moritz of Neufbrisach, after briefly alluding to another case, in which this salt induced very serious symptoms, states that on examination he found it contained a notable quantity of the sulphate of zinc. He observes that the sulphate of potass of commerce sometimes contains zinc, while other specimens contain both zinc and copper. The sophisticated salt is procured from Germany, where it is the secondary product of the manufacture of nitric acid, in which the sulphate of iron has been substituted for sulphuric acid. The ferruginous salt contains a variable quantity of zinc, copper, &c., according to the sulphurets from which it has been procured. Chemists purchasing this salt therefore, instead of preparing it themselves, should examine it and purify it.

Decomposition of Urine. — Healthy urine, collected in clean vessels, decomposes slowly even at a temperature of 78 degs. Faht., and in stormy weather. It becomes slightly turbid a few hours after its emission, and a very light flocculent substance is deposited, after which it again becomes limpid. It does not effervesce with acids, and give out carbonic acid until the 9th or 10th day; by the 14th it gives out nine times its volume of carbonic acid, which however is only 75 or 80 per cent. of the entire quantity it can furnish. If, instead of setting the urine aside, one per cent. of yeast is mixed with it, the formation of carbonic acid is much more rapid, and fermentation is complete by the 7th day, the urine yielding up 12·6th times its volume of gas. With the addition of glue in the proportion of 2·5 for 100 of the weight of urine, fermentation is almost completed by the third day. The addition of a few drops of carbonate of ammonia causes the entire decomposition of the urine in five days. Old urine mixed with the fresh secretion exercises an analogous influence; but the most energetic of all the agents of decomposition of urine is beyond all doubt the white deposit which forms during fermentation at the bottom of the vessels which are commonly used to hold the urine. Two scruples of this matter added to fresh urine, have caused its complete decomposition in twenty-four hours.

Hypochlorous Acid.—If into a flask full of dry chlorine there be thrown the oxide of mercury prepared by decomposing the nitrate or bichlorurct with an excess of potass, and then washed and dried at the ordinary temperature, a rapid disengagement of heat and light is observed, and there is produced a gaseous mixture of hypochlorous acid and oxygen, the proportions varying according to the state of division of the oxide and the temperature. The same experiment performed with a flask of chlorine previously cooled, gives a different result; the reaction takes place almost without heat, and the whole of the chlorine is changed into hypochlorous acid. This acid is also produced in a state of great purity when oxide of mercury calcined at a temperature of from 636 degs. to 848 degs. Fh., is employed. Thus whether the operation is performed at a temperature many degrees below the freezing point, with the oxide precipitated and dried at the ordinary temperature, or the process is carried on at the ordinary temperature with the oxide obtained by precipitation, but calcined at 636 degs. or 848 degs. Faht, the action lasts several minutes, is not accompanied by heat, and hypochlorous acid without oxygen is produced. If there be employed the oxide prepared by the calcination of the nitrate of mercury, or by the direct oxidation of the metal, no elevation of temperature will be observed, and the production of hypochlorous acid will be scarcely evident. Guided by these observations, M. Pelouze advises the following plan for the preparation of hypochlorous acid; a current of chlorine is to be passed gradually (*bulle à bulle*) into a flask of water, and thence into two tubes, the first being filled with the chloruret of calcium, and the other with the binoxide of mercury, precipitated and calcined at a temperature near that at which it is decomposed. This latter tube is luted to a narrower one, the end of which dips into the flask in which the hypochlorous acid will be collected in a state of perfect purity. M. Pelouze has succeeded in liquifying hypochlorous acid by subjecting it to a degree of cold below zero, Faht., under the ordinary pressure of the atmosphere. In the liquid state its color is as red as arterial blood; its odor resembles that of chlorine and iodine, but it is stronger, more penetrating, and is painful to the eyes; it boils at 65 degs or 66 degs. Faht. Its vapour is of a reddish yellow color, and cannot be confounded with that of chlorine, especially when the two gases are regarded comparatively. It causes cough and spitting of blood. This acid is more dense than water, sinking to the bottom, and gradually dissolving in it, imparting to it an orange yellow colour. Arsenic, phosphorus and potassium burn with a flame and often with a violent explosion when they are thrown into hypochlorous acid, either in the gaseous or liquid state. Powdered antimony behaves in the same manner; but if in the lump, the liquid acid may be distilled over it, without the slightest change in either of the two bodies. Hypochlorous acid detonates at a gentle heat, but its elements sometimes separate slowly, and without noise. It is singular that the vibration caused by a single touch of a file upon the tube containing a few drops of this acid, are sufficient to cause a detonation, even if it be at zero. It is very dangerous to pour it from one vessel to another. M. Pelouze has shewn, in opposition to the opinion of Gay Lussac, that this acid really is coloured, like all the other gaseous combinations of chlorine and oxygen, that the color is considerably heightened by liquifaction, and diminished by its solution in water, in which it is much more soluble than is generally supposed. Water at 32 degs. Faht., dissolves 200 times its volume. The color of this solution is yellow, like that of the chloride of gold; its odour is the same as the decolorizing chlorurets, but of such intensity that it is penetrating and insupportable; it has a very caustic action upon the skin, which it disorganises and destroys rapidly, causing at the same time severe pain and a deep ulcer which cicatrises with difficulty. Antimony decomposes it rapidly; arsenic inflames in it, producing in the midst of the fluid a beautiful blue light. Hydrochloric acid, ammonia, and oxalic acid produce a very marked effervescence; arsenious acid becomes acidified, causing a series of petty detonations in it. The sulphuret of lead is quickly changed by it into a sulphate, and the protoxide salts of manganese into the peroxide. Chloruret of silver decomposes it rapidly by mere contact, but is itself no way changed by it. The easy decomposition of this acid by hydrochloric acid furnishes an excellent means for abundantly procuring crystals of the hydrate of chlorine; all that is requisite is to cool a solution of hypochlorous acid to 28 degs. or 30 degs. Faht., and to add hydrochloric acid by drops. The chlorine set at liberty unites with the water, and forms a great quantity of crystals of hydrate of chlorine.

Grinders' Consumption.—Dr. Calvert Holland of Sheffield, has published a communication, in which he draws the attention of the profession to the prevalence of consumption in that town, chiefly among workmen engaged in what is called dry grinding. The principal productions of Sheffield, cutlery and edge tools, are all ground upon either a dry or wet stone, many upon both, on the dry stone first and the wet one afterwards. The injurious effects of the occupation belong particularly to dry grinding, and the evils which it produces are comparatively of modern origin. Previous to the employment of steam as a propulsive power, the grinding wheels were situated on the banks of rivers, the workmen thus having the advantage of fresh air and exercise, or when erected in the town, free ventilation was effected by dilapidated roofs, shattered doors and broken windows. At that time dry grinding was almost unknown. The introduction of it has been owing to the gradual diminution in the scale of wages. The one process is much more expeditious than the other, and is now very generally employed. The modern grinding wheels are all built in the town, without any regard to ventilation, and each room is occupied by eight or ten persons, belonging to the different branches; clouds of dust arising from the stone consequently envelope the grinder, and play about the head, the respiration being continually disturbed by the inhalation of the numerous floating particles thereof. The injurious effects of the occupation are greatly aggravated by poverty, over exertion and dissipation, to which the workmen all give way. The greatest danger attends the grinding of small articles, as needles, pen-knives, scissors, razors, and forks, the face of the workman being necessarily within a few inches of the stone, so that it is quite impossible to avoid the inhalation of the dust, which is composed both of gritty and metallic matter, and in needle grinding, the concrete masses of it which are formed have almost the specific gravity of iron. The earliest inconveniences experienced are occasional irritation in the larynx and trachea, exciting cough and slight expectoration of saliva coloured with the inhaled dust, so much so as sometimes to be quite black: a dryness of the throat also generally exists. The symptoms do not perceptibly disturb any of the functions of the system, and many continue for several years without any serious aggravation. In some cases, however, where the constitution is defective in tone and vigor, shewing a scrophulous or leucophlegmatic tendency, the expectoration soon loses the condition of simple saliva, and purulent-like matter is observed mixed with the inhaled dust. The constant irritation of the mucous membrane of the trachea and bronchi causes it gradually to lose its natural sensibility, so that the inhalation of the dust, though baneful in the extreme to the whole of the respiratory organs, is modified in its influence by the diminished susceptibility of the delicate secreting surface. The trachea and bronchia are, therefore, less frequently the seat of serious morbid changes than would be anticipated from the constant action of the exciting cause. Dr. Holland believes that the fine particles of dust are often conveyed through the minute bronchial ramifications to the lungs, and there give rise to structural alterations; and he remarks, it is impossible to conceive how, in the ordinary process of respiration, the finest particles should not be conveyed into the

pulmonary substance. There is nothing in their structure to prevent it. The relief afforded in cases of difficult breathing by expectoration of a brown or black gritty sputa he regards as confirmatory of his opinion. The color and character of the expectorated matter establish the inhalation of dust, and, in numerous instances, the fact that it has long existed in the respiratory organs. The great mortality among grinders is from 21 to 35 years of age; the delicate in constitution and the wretched in circumstances break up long before the latter period, from degeneration of the lungs, presenting the ordinary symptoms of tuberculous phthisis. With very limited exceptions, the few who live beyond 35 years of age—in the most deleterious branches of grinding—present symptoms of an enlargement of the bronchial tubes and an expansion of the pulmonary tissues. When the constitution is vigorous, and the individual possesses a well-developed chest, the injurious influence of the dust is, to a great extent, confined to the production of bronchial irritation, at least for a considerable period; the result of which is a frequent and severe cough, existing for several years, unaccompanied with any morbid derangement of the animal economy. The pulse is slightly, if at all, accelerated; nor do we observe any fever or disturbance of the digestive powers. The continuance of the cough excites little anxiety in the artisan, interfering in no way with his daily occupations. At length, however, he complains of difficulty of breathing, which is aggravated on every exertion, whether of walking or coughing, and then he is regarded by himself and others as attacked with asthma—a term which is almost universally employed at Sheffield to designate his symptoms. This form of disease is no certain protection against the inroads of further pulmonary degeneration, as tubercles, hepatization, or any other structural change. The enlargement of the bronchial tubes, on which it would appear chiefly, if not exclusively, to depend, affords, nevertheless, to an important degree such protection, and the longest lived amongst the diseased grinders by many years are found among the asthmatic class. The workmen who die of consumption frequently exhibit traces of active inflammation in some of the organs of the chest; in some the pericardium is thickened and adherent to the heart, but the most common effects observed are strong attachments between the pleura of the lungs and the internal surface of the thorax. In some instances they are exceedingly firm, formed by strong bands of effused lymph several lines in thickness. The history of the cases seldom affords any accurate information respecting the origin of such changes.

Compound Dislocation of the Thumb.—A drayman, 28 years of age, was admitted into the Pennsylvania hospital under Dr. Norris, with a compound dislocation of the first upon the second phalanx of the left thumb, which no surgical effort could reduce. The head of the first phalanx protruded considerably inwards through a wound which embraced more than one half the circumference of the thumb; the projecting head Dr. Norris removed with the metacarpal saw to the extent of three or four lines, after which the parts were easily replaced. He was discharged a month afterwards, and shortly after he called again at the hospital, at which time he had good use of the thumb, with some motion at the point of injury. The practice adopted by Dr. Norris is that recommended by Sir A. Cooper, and has often been done with success. Gooch states that he sawed off the head of the second bone of the thumb, and that a new joint afterwards formed. Mr. Cooper reduced a case at the University College Hospital, which was followed by severe inflammation, terminating fatally, a week after the accident.

Fistula in Perineo.—James M'Cracken, 28 years of age, was admitted into the Pennsylvania Hospital with fistula in perineo, resulting from falling against the edge of a railway car. A small wound was caused, through which the urine has continued to flow ever since. The fistulous opening was situate about two inches anterior to the anus, and a little to the left of the raphe; it was small, and the urethra was so much contracted as to permit the introduction of even a fine probe from this opening into the bladder with difficulty. A sound could be passed from the penis to within an inch of the fistulous opening, at which point it was arrested by a hard unyielding mass, into which the finest bougie could not enter. The opening in the perineum was carefully dilated until a full sized instrument could be passed into the bladder from it, when the following operation was performed:—The patient having been placed and secured, as in the operation for stone, a large staff was introduced through the fistula into the bladder, and a straight sound was passed from the mouth of the urethra down to the obstructed part, and carefully held by assistants. An incision was then made, exposing the point of the sound, and laying open the corpus spongiosum down to the track of the urethra, and extending below to the staff which had been passed into the bladder from the fistulous orifice. The sound was then withdrawn, and a full-sized gum-elastic catheter was passed from the penis down through the opening which had been made, and its end was then slid along the groove of the staff from this point into the bladder without difficulty. The latter was now withdrawn, and the sides of the incision were brought together with five points of the interrupted suture. Very little pain or inflammation followed this operation; the wound slowly contracted and cicatrized, the granulations being occasionally touched with nitrate of silver. The catheter required to be withdrawn and cleansed every second day, it became so clogged; the first time this was done some difficulty was experienced in replacing it, in effecting which the adhesions were partially broken up. The patient was ultimately dismissed—cured.

Varicose Aneurism from Bleeding.—Notwithstanding the superficial situation of the vessel, but few examples of the cure of false aneurisms at the bend of the arm by compression can be cited, except it be made immediately after the occurrence of the accident, when, if applied with judgment, it will generally prove successful. The mere application of pressure over or above the wound, in the way it is commonly made after venesection, will, however, almost invariably fail. Where the artery is wounded and compression is resorted to, a folded piece of lint should be placed over the wound, and a roller well and evenly applied to the member from the fingers to the shoulder, which will prevent the edema and great pain so often resulting from the application of pressure at the point of injury alone. The limb after the bandaging should be kept in a state of perfect rest, by means of an angular splint applied on the side of the arm, for a week or ten days after the accident, during the whole of which time the patient should be closely watched, and the bandage renewed as often as may be necessary. Where however some little time has elapsed after the production of the disease, compression is little to be relied on in its results, severe pain, excoriation, and even gangrene of the sac, having all repeatedly occurred from its application: except when very recent too, the Hunterian operation is now commonly looked upon as inapplicable in these cases, and is abandoned, generally experience proving that it fails where the affection is of any standing. The old operation of laying open the sac, and securing the vessel above and below the wounded point is still recommended by many estimable authors, is often performed, and when the disease is of long standing, and of large size, is always the best and safest operation. The difference between the old operation for true aneurism and the same proceeding applied to the treatment of varicose aneurism, is that in the latter case a wounded vessel in comparatively a healthy condition is ligatured, while in the former instance we have a tumour caused by direct disease in the part operated on, and where consequently the vessel is unable to take on healthy action. In all operations for varicose aneurism it is better, if possible, to avoid division of the vein; sometimes this is impossible, and when divided, a thin ligature should be applied.

Chorea Cured by Mistake.—Dr. Hildreth, of Zanesville, Ohio, states, that he was informed by a medical friend of undoubted veracity, that he once knew a case of chorea cured in four or five days by mistake. The patient was a mulatto girl, of 17 years of age. Her physician had great confidence in the powers of arsenic in this affection; he therefore prescribed ten drops of Fowler's solution to be taken three times a day. The patient, thinking this dose too small to do any good, took 20 or 30 drops instead of 10. As a matter of course, she was completely poisoned in a very short time, and was obliged to take the proper antidotes for arsenic to save her life. On recovering, however, from the effects of the poison, she was found to be permanently free from all signs of chorea. Dr. Hildreth relies upon large doses of quinine, from 15 to 30 grains in the course of the day, given so as to produce occasional, but not constant, tinnitus aurium, that is to say, pushed so far as to threaten incipient quininism. Judging from its action in the cases in which he has given it, he considers it will shorten much the duration of the disease. If there be evidence of cerebral congestion, or fulness of the vascular system, it should not be given without preparation: the secretion of the stomach and bowels should be rendered healthy, and if anæmia be present, it should be combatted at first by chalybeates.

Mercurial Ointment in Small-Pox.—Dr. Stewardson has made a careful trial of the application of the strong and diluted mercurial ointment over the *locale* of the small-pox pustules to prevent their maturation, from which he concludes, if applied on the third day, by spreading it upon a piece of thick muslin, previously shaped like a mask, with apertures for the eyes, nose, and mouth, and extending from the ears, and roots of the hair, to the lower margin of the jaw, and kept in its place by strings attached to its posterior margin, and tied across the back of the head and neck, it is decidedly beneficial, not merely in lessening the liability to cicatrices, but in diminishing the swelling, and preventing the formation of thick crusts. That by its use pitting may be entirely prevented, or the mortality of the small-pox materially lessened, seems to him very doubtful. M. Briquet advises, that the crevices around the alæ of the

nose, its point, &c., to which the mask cannot be kept constantly applied, should be previously smeared over with the ointment, and further, that the mask should be occasionally removed, and re-anointed. There is very little cause to apprehend salivation from this application. Trials were made by Dr. Stewardson with simple cerate and lard, but they were decided failures.

OTOPLASTY.—Dr. Pancoast, of Philadelphia, performed an operation for supplying part of a new ear, on a boy 8 years old, the left side of whose face had been deformed by an extensive burn three years before. The lobe and tragus of the ear, and the skin covering the ramus and part of the base of the jaw, were involved in a common cicatrix. The pinna was drawn close to the head, and the lobe from the destruction of the skin on its posterior surface, was lost in the common covering of the face and neck. The operation was performed as follows:—a piece of integument, somewhat larger than the natural size of the lobe, was marked out with the scalpel in front: a semicircular portion of larger size, but narrowed where it touched the posterior part of the cicatrix, was dissected up from over the insertion of the sterno-cleido mastoid muscle. A sharp-pointed bistoury was then passed under the front portion, so as to raise it with a single sweep of the instrument. The everted edge of the tragus was then loosened with the knife; the raw surface below, which was of considerable size, bled freely from two small arteries, that did not, however, require ligatures. The margins of the wound were brought together with two harelip sutures, and a strip of adhesive plaster. The posterior flap was then brought round in front, under the anterior, and the edges fastened together with two stitches of the interrupted suture. The parts then presented a good appearance, the lobe being made larger than was natural, to admit of the shrinking which must necessarily follow. The lower part of the ear, which had been strained downwards by the cicatrix, retracted when loosened by the steps of the operation, to very nearly the natural length. The report 16 days after the operation was to the effect, that the lobe was a little tumid, but well-shaped, and the ear presents an appearance but little different from that of the opposite side.

HÆMORRHAGE FROM THE MUCOUS SURFACES, CAUSED BY THE BICHLORIDE OF MERCURY.—Mr. Radclyffe Hall, of Holmes' Chapel, Cheshire, narrates the case of a stout healthy labourer who was seized with epistaxis, hæmoptysis, hæmatemesis, and hematuria from the injudicious administration of the bichloride of mercury by a druggist for the removal of gonorrhea. The man was ultimately cured by the sesquichloride of iron and other astringents, and the internal use of lemon juice, which latter was prescribed inasmuch as the case presented some resemblance to scurvy. The hæmorrhagic blood was of a dark brown colour, thin and very fluid, and coagulated very imperfectly and loosely. Mr. Hall believes that in some cases mercury produces an alteration in the constitution of the blood, and he would apply that influence to the explanation of this case. In the treatment of syphilis, he assumes that mercury causes such a change in the elements of the blood as to incapacitate them from undergoing the metamorphosis which the animal poison would otherwise occasion, a mineral poison, the effects of which are manageable, being given to subdue an animal poison, of which the operation is less governable. The transmutation of the healthy blood being gradual, the changes gradually effected by mercury repeatedly taken into the system prevent further alteration of the vital fluid by the syphilitic virus.

RHEUMATIC INFLAMMATION OF THE HEART.—In a long rambling clinical lecture, Dr. Seymour observes, that it happens in some cases of rheumatism during the course of the disease, or simultaneously with its origin, that the patient complains of pain about the heart, and the pulse will be hard, small, and quick, and soon become irregular. The patient can lie upon his back, and, in the earlier stage, may be able to rest upon the affected side; but his countenance will be indicative of great anxiety and depression. These symptoms denote inflammation of the pericardium, and although, on its accession, the rheumatic pain leaves the extremities and centres about the heart, yet it sometimes does not do so. Now, if this goes on unchecked, the patient will die in six or seven days, and sometimes sooner, and during the last few days he will be tormented with dyspnœa, constant cardiac pain, and frequently recurring syncope. After death the opposing surfaces of the pericardium will be found covered with lymph, with much effused serum, and globules of pus floating here and there in the pericardiac cavity. If the inflammation has continued for any length of time, there will be successive layers of deposited and organized lymph, presenting a reticulated appearance. The opposite surfaces of the pericardium will be adherent, the heart thereby becoming impeded in its action, and also enlarging in volume; the termination is dropsy and death. The most successful treatment is by bleeding, and the internal administration of calomel and opium, of which comparatively large doses may be given without inducing salivation. But though the treatment be thus far successful, the heart remains more or less crippled, and sooner or later fatal results will be sure to follow.

CORONER'S INQUEST.—The inquest on the body of Matilda Strong, aged ten weeks, (to which we referred in our last number,) came to a close on Monday night. The child's mother, it appeared, sent her son, aged 12 years, to the shop of Mr. Chambers, about three weeks ago, to get "something for a child that had a pain in its bowels." A week afterwards, she sent him a second time, with the same bottle, to the same shop, for a pennyworth of the same medicine. He was served by a woman, who, it is supposed, gave him laudanum, instead of the medicine sold to him before. The child received a portion of the second supply, and died on the following morning. Mr. Chambers and his servant were examined by the Coroner (W. Stoker, Esq.), and declared that the lad asked for laudanum, and said it was for a woman. The jury returned the following verdict:—that Matilda Strong came by her death through some unknown medicine, supposed to be laudanum, administered by her mother, *the same having come into her possession by the negligence of Mr. P. T. Chambers, in allowing a girl,* WHO CAN NEITHER READ OR WRITE, *to dispense medicines in his shop*; and we recommend that the whole proceeding be published."—*Gateshead Chronicle.*

DYSMENORRHEA.—M. Trousseau has found the application of a leech to the internal surface of the knee, bring on the menstrual secretion in three instances. In one, the catamenia appeared within an hour after the leech had fallen off, and continued for a day: the application of a leech to the other knee caused their re-appearance and persistence for three days.

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J. G. Perry, Surgeon, Foundling Hospital, London.
Dr. Rae, Royal Hospital, Chatham.
J. R. Martin, Esq., (late of Calcutta,) Grosvenor-street, London.
Dr. Jackson, late Apothecary-General, Bengal.
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THE MEDICAL TIMES:

A Journal of English and Foreign Medicine and Medical Affairs.

No. 196. Vol. VIII. LONDON, SATURDAY, JUNE 24, 1843. PRICE FOURPENCE. Stamped Edition 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE XI.

We have found that alcohol, by loss of hydrogen, becomes aldehyd; and that aldehyd, by acquiring oxygen, becomes acetic acid. I have now to consider another series of changes which may be effected upon alcohol, having reference to the abstraction of the elements of water, and to shew you that alcohol, by the loss of water, becomes ether: the former series of changes had reference to dehydrogenisation; those we are now to consider, to *dehydration:* and, perhaps, it may be well, in the first instance, to give you the formulæ of these changes. The empyrical formula of alcohol, you will recollect, was $C_4\ H_6\ O_2$; that of ether is C_4, H_5, O; now, if we consider ether as the oxide of a hydro-carbon, composed of 4 atoms of carbon, and 5 of hydrogen, alcohol will then be the hydrate of that oxide, and we shall have the following rational formulæ:—

Ethyle	C_4, H_5.
Ether	C_4, H_5, O
Alcohol	$C_4, H_5, O+HO$

Now, this is, in many respects, the most convenient and consistent hypothesis; but there are other aspects under which these elements may be viewed: thus, we may regard ether as a hydrate of etherine; or as

$$C_4, H_4 + HO$$

in which case alcohol would be the binhydrate of the same base; or

$$C_4\ H_4 + 2\ (HO)$$

And some of the changes which alcohol and ether suffer under the influence of sulphuric acid, are by no means inconveniently explained by the help of such an hypothesis.

Inasmuch, however, as you will afterwards find ether conducting itself in many respects as a true *oxide*, or as a peculiar form of a salifiable base, the formula which I shall here adopt will be

$$C_4\ H_5\ O = \text{Ether, or Oxide of Ethyle.}$$

Ether may be obtained in various ways from alcohol; in other words, water may be abstracted from alcohol by various means; it may be done by the action of fluoboric acid, by chloride of zinc, by potassium; and in all these cases the water of the alcohol is either abstracted or decomposed, and the ether, as it were, set free—and, being volatile, it may be separated from the other product by distillation. Theoretically, these are very interesting results; but, practically, ether is always obtained by the action of sulphuric acid, a body of whose powerful affinity for water we have on many occasions availed ourselves, in the course of these lectures.

In this retort I have a mixture of equal weights of alcohol and sulphuric acid, which I shall proceed to distil into a cold receiver; but, inasmuch as ether is very volatile, it is well to keep the neck and tube of the retort cool by a piece of blotting paper, over which water is constantly dropping from a funnel, or what answers the same purpose, by Liebig's refrigerator. [This process was going on upon the lecture table.] I continue the distillation till the product amounts to somewhat more than half the volume of the alcohol I set out with; if I continue the heat, I should soon be obliged to desist from the swelling up and blackening of the materials in the retort, which would boil over and spoil the result. If a little water be now added to the product in the receiver, it will gradually separate into two layers—the upper or lighter liquid is chiefly ether; I pour it off, and adding to it a little quick lime, I carefully re-distil it, and obtain about three-fourths its bulk of pure ether.

Now this is the old process for obtaining ether; it has, however, lately been superseded by a very clever arrangement, contrived by Mitscherlich, and founded upon the discovery of Boullay, that under proper management an indefinite quantity of ether might be obtained from the same portion of sulphuric acid; this apparatus I must describe in detail.

[We regret at being unable to introduce a wood-cut representing this very ingenious and effective distillatory apparatus. It consisted of a large glass flask (capable of holding about three quarts) placed in a copper sand bath, heated by a treble concentric gas burner; the orifice of the flask (being about 3 to 4 inches in diameter) was closed by a disc of plate glass, made air tight by grinding, and kept in its place by a brass clamping collar. In this plate were three openings;—one for the passage of a thermometer, shewing the temperature of the liquid in the flask; a second for the passage of the tube of a long funnel terminating near the bottom of the flask, and considerably, therefore, below the surface of the liquid; from the third opening a tube issued nearly an inch in diameter, for the purpose of conveying the vapours generated within the flask to a cylindrical glass condenser, surrounded by cold water, and from the bottom of which a tube passed into a receiving bottle. Immediately over the cup-shaped opening of the funnel above mentioned, was placed a dropping-tube regulated by a stop-cock, and connected with a glass vessel holding about a quart of alcohol. At the commencement of the experiment, the flask was about one-fourth filled with a mixture of 100 parts by weight of sulphuric acid, 20 of water, and 50 of alcohol, and its temperature, was raised by means of the gas burner to 284°, the level of the liquid in the flask being marked by a strip of paper; when matters were thus arranged alcohol was suffered to dribble in through the funnel, in the cup of which a piece of wool was put to prevent any spirting out from it, and the supply was so regulated as to maintain the constant level within the flask indicated by the paper mark; in fact, it appeared that for every drop of alcohol which fell into the boiling contents of the flask, a corresponding drop of the distilled liquid fell from the delivery tube. This process went on till the conclusion of the lecture; but, in order to shew what had happened, Mr. Brande produced a quart bottle containing the results of the same experiment carried on for four hours on the previous day; it contained ether and water, which were separated, and the ether rectified as before, over a little lime. Mr. Brande here observed, that in this way any quantity of alcohol might be etherised by the same portion of sulphuric acid, which, if all the precautions pointed out were strictly obeyed, underwent no further change than that resulting from accidental impurities; the quantity of ether, too, which is thus obtained is in strict accordance with theory—46 parts of alcohol being resolved into 37 of ether and 9 of water; it being, however, impossible, of course, to avoid the passing over of some undecomposed alcohol. Thus it appeared, from one of Mr. Brande's tables, that in an experiment carried on upon a large scale the product consisted of 65 per cent. of ether, 18 of alcohol, and 17 of water.]

Now as to the properties of ether. Its specific gravity is about 0·713, when free from alcohol and water; it is eminently volatile, and if poured out upon an exposed surface is constantly giving off its dense vapour, which being very inflammable should be most cautiously approached by flame. The high specific gravity of ethereal vapour, as compared with air, is well shewn by suspending a piece of sponge imbued with ether in the air, and approaching it with a lighted taper, which may be brought close to it from *above*; but if held *below* the sponge, meets the column of descending vapour and inflames it. The fact is, that the density of ether vapour is to that of air as 2586 to 1000; 1 volume of ether producing only 212 volumes of its vapour. The rapid formation of etheral vapour is, of course, attended by considerable absorption of heat; hence the cold experienced on suffering ether to evaporate from the hand, and the comfort derived from the ethereal enbrocations in some cases of head-ache and inflammation. [Water was here frozen by the cold produced by evaporating ether.] The results of the combustion of ether, like those of alcohol, are, of course, carbonic acid and water; its vapour mixed with about 10 volumes of oxygen produces a powerfully detonating mixture when inflamed. It is exhilarating and anodyne; and its vapour mixed with air and taken into the lungs inebriates, but the effect soon subsides. A tea-spoonful of ether taken into the mouth produces, in consequence of its very sudden expansion into vapour, a powerful and alarming, but transitory sense of suffocation: I have heard of agues being cured by the fright and shock thus occasioned. When ether is long kept exposed to light, and to the occasional access of air, as in bottles which are frequently opened, it becomes less perfectly volatile, acquires a peculiar odour, and ultimately reddens litmus in consequence of the formation of a little acetic acid; it should, therefore, be preserved in small and well-stopped bottles. Passed through a red-hot tube, aldehyde and carburetted hydrogen are the results of its decomposition.

I must now say a few words on the theory of the formation of ether. We have seen that alcohol contains the elements of ether and water, and inasmuch as certain substances having a very high affinity for water, and sulphuric acid among the number, are capable of so acting upon alcohol as to evolve ether, it might appear that this abstraction of water was the sole effect: as regards sulphuric acid, however, more complicated changes appear to ensue. The acid and alcohol appear, in the first instance, to enter into a new combination, which has been called *sulphovinic acid*, and this is generally regarded as a necessary, preliminary step, to the formation of ether. That a new acid body is thus really formed, and that we are not dealing with a *mixture* of sulphuric acid and alcohol is demonstrable in several ways, but especially by the distinct soluble salts which the newly formed acid compound forms with baryta, and with oxide of lead, and which, you observe, are in all respects different from the sulphates of those bases. Now, the most satisfactory theory of the change which thus ensues on mixing oil of vitriol and alcohol is this:—oil of vitriol being, you will recollect, a hydrate of sulphuric acid, $(SO_3, +HO,)$ and alcohol, a hydrate of ether $(C_4, H_5, O+HO,)$ they produce a sulphate of ether, and 2 atoms of water are thrown off; thus, before mixture, we have

$$SO_3, +HO \text{ and } C_4, H_5, O+HO$$

and after mixture,

$$SO_3, +C_4, H_5, O \text{ and } 2\ HO.$$

Now, this latter compound unites to an additional atom of sulphuric acid to form sulphovinic acid, which may, therefore, be otherwise termed a bisulphate of ether, and accordingly, the salts called

sulphovinates, include 2 atoms of sulphuric acid, 1 atom ether, and 1 atom of base. But the sulphovinic acid, as above constituted, is not permanent at the high temperature at which ether is distilled, and accordingly its ether being disengaged, and highly volatile, goes over along with part of the water. Mitscherlich, however, in reference to the continued production of ether by the same quantity of sulphuric acid maintained at a temperature which subverts the composition of sulphovinic acid, regards tho action which then ensues (as in the process I have shewn you) as only referable to *catalysis*, the alcohol, under these circumstances, being, as it were, split into ether and water, which come over together. Now, although there can be no doubt of the formation of sulphovinic acid at certain low temperatures, it seems equally clear that that acid cannot subsist at high ones; and, therefore, in whatever way the mutual action of the acid and alcohol at high temperatures is explained, the result is quite consistent with Mitscherlich's statement. If, in his apparatus for the production of ether, the temperature falls short of 280°, alcohol passes over undecomposed; if, on the other hand, the temperature exceed 280°, the ether is decomposed, olifiant gas is evolved, and carbon separated, which reacts upon, and decomposes the sulphuric acid, occasioning the evolution of sulphurous acid, and carbonic acid. Under these circumstances, too, other complex changes ensue, attended by the production of a peculiar salt of hydro-carbon, called *oil of wine*, or *etherial oil*, which appears to correspond with the sulphovinates, the base, however, being quadri-hydro-carbon. If this view be correct, the formula for oil of wine is—

$$\left.\begin{matrix} C_4,\ H_5,\ O \\ C_4,\ H_4, \end{matrix}\right\} + 2\,(SO_3,)$$

[These theoretical views of the composition of the sulphovinates, and of the action of sulphuric acid upon alcohol and ether, were explained by a series of tables, and by models, in which the elements were represented by differently coloured cubes.]

Ether, considered as an oxide of a base, that is as $C_4, H_5, + O$ (oxide of ethyl) forms with the oxyacids and hydracids a series of compounds bearing an atomic analogy to the salts of ammonium and ammonia, or, in which ethyl may be regarded as equivalent to a metal, and ether to a metallic oxide. These ethereal salts are usually obtained indirectly, by the action of acids upon alcohol, and they are called acid ethers: thus *hydrochloric*, or *muriatic ether*, is obtained by saturating alcohol with hydrochloric acid gas, and then distilling from a water-bath into a cold recipient, the product being afterwards re-distilled off chloride of calcium to free it from water and alcohol. It is an extremely volatile liquid of an aromatic and somewhat alliaceous odour; it is a chloride of ethyl, its formula being $C_4, H_5, Cl.$; so that in its formation from ether and hydrochloric acid $C_4, H_5, O + HCl.$ have become $C_4, H_5, Cl. + HO.$ Bromide, iodide, sulphuret and cyanide of ethyl, are analogous compounds, as regards their respective formulæ.

In the ethers of the oxyacids, an atom of oxide of ethyl is combined with one of the acid; thus we have carbonic, oxalic, benzoic, acetic, and other ethers: to one of these, viz., the *hyponitrous ether*, and its concomitants, I must ask your attention somewhat more it detail.

The action of nitric acid upon alcohol is extremely violent and unmanageable. If I mix about equal parts in a flask, at first they remain quiet, but soon a bumping and bubbling ensues, the temperature rises rapidly, and vapour, consisting chiefly of nitrous ether and nitric oxide gas, is given off with almost explosive violence.

[This experiment was shewn, and the vapour was inflamed as it issued violently from the mouth of the flask.]

Besides the products I have mentioned, formic acid, acetic acid, aldehyd, oxalic acid, and carbonic acid, are also formed, these being the consecutive results of this oxidizement of ether.

The best way of obtaining nitrous ether is that recommended by Liebig, which consists in transmitting a current of nitrous acid vapour (produced by heating in a large retort a mixture of starch and nitric acid) through a mixture of about 2 parts of alcohol and 1 of water, contained in a two necked bottle, placed in ice: the nitrous ether which is thus formed passes through the tube issuing from the second opening of the two-necked bottle, by which it is conducted into a receiver placed in a freezing mixture, and there condenses into a pale yellow liquid, the density of which is 0·94, and its boiling point only a little above 60 deg.; it has an agreeable pomaceous odour, and, when exposed to air, absorbs oxygen, yielding aldehyd and formic and acetic acids, and evolving nitric oxide gas. It is this ether, dissolved in alcohol, which constitutes the spirit of nitrous ether, or sweet spirit of nitre used in medicine. The rational formula of this ether is $C_4, H_5, O + NO_3$, which represents it as a *hyponitrite of oxide of ethyl*.

If, instead of limiting the action of nitrous acid and alcohol to those substances alone, we have the oxide of mercury or of silver at the same time present, I then obtain those extraordinary and dangerous compounds called fulminating mercury, and fulminating silver, these being compounds of the respective metallic oxides, with a new acid composed of carbon, nitrogen, and oxygen, isomeric with cyanic acid, and called *fulminic acid*; the formula of which is $C_4\ N_2,\ O_2$, or $2\,(C_2, N, O.)$ This acid is bibasic, but it cannot be isolated, for whenever we attempt to separate it from the bases with which it is combined, it resolves itself into other compounds. Fulminating mercury has lately become a very important article of manufacture, it being largely employed for the detonating caps which have so entirely superseded the use of flints in gun-locks. Both it, and fulminating silver, and the latter more especially, are extremely dangerous substances to deal with; they cannot be made or handled with too much circumspection, and have been the source of most calamitous accidents even in the hands of cautious and experienced persons. Fulminate of mercury may be made by dissolving 100 grains of the metal in a measured ounce and a half of nitric acid, and pouring the solution into two ounces of alcohol in a wedgwood basin: the mixture should be gently stirred and heated upon warm sand till it begins to effervesce, and then immediately removed, and should the action become very violent it must be mitigated by putting the basin into a vessel of cold water; a great quantity of inflammable vapour escapes, and during the effervescence a grey powder gradually makes its appearance, which is the fulminating mercury; when all is quiet we pour off the liquid, wash the residue with a little distilled water and place it on a filter, where it should be carefully dried in a warm room. During the whole of this process the utmost caution should be used in avoiding touching the powder with any hard material, for even when moist or under water, it is not safe from explosion, and when dry, requires even more care in its management. If in quantity, it should always be kept moist and all possibility of friction guarded against; a jar tied over with soft leather is, perhaps, the safest vessel for keeping it in. If I heat it, or rub it, or strike it, it explodes with more or less noise; if you put a little pinch of it upon an anvil and strike it a fair blow with a hammer, the report is stunning; the same quantity heated upon a piece of platinum foil flashes off with little noise, but a brilliant flame. Fulminating mercury consists of two atoms of protoxide of mercury and one of fulminic acid.

By a similar process I may make fulminating silver. I dissolve 1 part of silver in 10 parts of nitric acid, and pour the solution into 20 parts of alcohol, or rectified spirit: the fulminate of silver is deposited with the same phænomena as those you have just witnessed, in respect to the fulminating mercury, and must be collected and dried with even greater care and apprehension, for it explodes upon being only touched with a hard body. The constitution of this salt is similar to the former, its proximate elements being 2 atoms of oxide of silver, and 1 of fulminic acid. In these fulminates, 1 atom of their respective metallic oxides may be replaced by 1 atom of potassa, baryta, or other alkaline base, but no fulminate containing 2 atoms of an alkaline base can be formed: we can, however, obtain fulminates in which the whole of the oxide of mercury or silver is replaced by the oxides of copper or zinc.

We must here take leave of this part of our subject: the formation of alcohol, involving, as it does, the theory of fermentation, is of itself a very important and interesting subject of inquiry; but its metamorphoses, which involve the production of acetic acid, and of ether, and its compounds, are also extremely curious. If I have succeeded in putting before you a tolerably correct outline of these matters, and in explaining it intelligibly, I have fulfilled my present intention: my whole course, had it been devoted to this subject only, would have scarcely given adequate time for its full consideration. I shall take my leave of you at our next meeting, with a brief review of such parts of our subject as have especial relation to the phænomena of vegetation and respiration, and to the mutual dependencies of the organic and in-organic creations.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE I.

ALTHOUGH this subject be, in all its bearings, one of pure demonstration, and though all its portions be dependent one on another, in the form of corollaries, yet it appears to me to be susceptible of division into four distinct and perfectly defined parts: In the FIRST PART (*prolegomena,*) my object will be to demonstrate the condition on which health depends, and, as a necessary consequence, to exhibit that state in which disease does not enter. In the SECOND PART (*Etiology,*) after having exposed, by direct analysis or by the analogy of the facts presented to our observation, the natural causes of disease, I shall proceed, by synthesis, from the effects described in our systems of nosology, to the determination of the causes of these different cases; that is to say, I shall, in the second division of this part, form the counter part, or so to express myself, the synonyme of the first. In the THIRD PART (*Therapeutics,*) I shall endeavour to ground practical applications upon the principles of the analytical theory; and, after having shown whence disease arises, to point out the treatment and the remedy. In the FOURTH PART (*Pharmacopeia,*) subjecting the medicinal kingdom to the foregoing principles, I shall estimate the direct or indirect action of the various medicinal agents; I shall reduce their formulary into a system, and thus at least trace out the plan of a physiological pharmacopeia.

This is not a pretension towards unexpected results; it is not a plan conceived *a priori*, from a new course of studies; it is but a simple recapitulation of the subjects on which I am about to treat.

FIRST PART.

I have entitled this first part *prolegomena*; inasmuch as it is not susceptible of any further division, but is constituted by a series of propositions and theorems, which are deduced the one from the other, and are mutually dependant on each other for their existence and confirmation.

THEOREM THE FIRST.

A living being, however complicated may be its structure, whether plant, animal or man, is an unity.—An unity implies a simple and, so to speak, an indecomposable idea, by the order and arrangement alone which all its parts maintain one towards another. Suppress one of its parts appreciable to the sight and essential to its composition, invert the order in which they are mutually arranged; and the whole changes in name, because it is altered in destination and in nature. Now, that which is true in inert nature is much more appreciable in organised nature. Every thing composing the organised being concurs to its development and participates in it; every portion contributes to its *general* life, and receives from it its *especial* life; the circulation, that inextricable net-work which entwines, in its innumerable meshes, the most voluminous, as well as the smallest organ,—the circulation gives activity

to the digestion; and the digestion in its turn feeds the circulation. The respiration gives life to the circulation; and all the surfaces in contact with the external air, respire it or become impregnated with it, so as to organise the fluids and regenerate that which has become vicious. Life radiates and circulates incessantly from centre to circumference, and, in the same route, from circumference to centre. This visible circulation is accompanied by another more rapid and more subtile, which bears to the organs the power of assimilating the products of the first, and which performs this function by a net-work as inextricable as the former; a net-work which, like the other, connects together the different surfaces and penetrates within their most intimate parts. This fluid, quick as lightning, and which seems to participate in the nature of that element, transmits on all sides and at the same moment the combinations of sensibility and of thought; the conductor at the same time both of the impressions which it receives at the surface, and of the will which it receives from the organ where the thought elaborates and defines its impressions.

Under this single relation, and with these two elements alone—for they possess them equally—the plant and the animal form an UNITY, if not equal, at least similar; they are organized. Their differences result from their modifications, and these modifications constitute their nature. Every organized being, then, whether plant or animal, however simple or however complicated may be its structure, elaborates, under the influence of the nervous system, the products which respiration and digestion have introduced into the circulating medium.*

THEOREM THE SECOND.

Every organised being, whether plant, animal, or man, may be considered as a single and undivided organ which becomes complicated during its development.—Man is developed from the ovum, as the plant is developed from the seed; and the ovum and the seed, especially towards the period of fecundation, present so much analogy the one to the other, that the most practised eye might be readily deceived, unless their origin had been previously known. In the beginning, the amnios or albumen appears like the embryo of the chorion (inasmuch as it is reduced to a simple structure, and as the chorion is infiltrated with dense and albuminous fluids,) while the true embryo does not commence to appear in the amnios, like the yolk in the egg of the chicken, until the chorion, being more or less sacrificed to the development of the amnios, enjoys less the character of an organ endowed with a proper function than that of a protecting envelope—of an elastic and softened shell. In the tissue of the ovary, whence the act of fecundation must sooner or later extract it, the human ovum is but an imperforate vesicle, a nameless and encysted vesicle, similar to the vesicles of the adipose tissue. The most delicate analysis can discover no other elements in it.

Trace with the compass three concentric circles, unite the second to the first, and the third or most internal to the second, by a double stroke; name the greatest the *chorion*, the middle the *amnios*, and the smallest the *embryo*; and you will have under your eyes a full outline or description of the germ whence issues man—the king of the Universe.

Fecundation extracts this globule from the ovary, to implant it like a parasite upon a nutritive surface—upon the surface of the uterus. The chorion, with its placenta, which serves it as a lung, elaborates the fluids which it draws in, and transmits them to the amnios which elaborates them in its turn, to be conveyed by the umbilical chord to the embryo; and when these two coverings have lasted their proper time, and have fulfilled their intention, when the embryo, better formed, and having accomplished all the phases of fœtal development, has need of more space and more air, its envelopes burst, and the embryo is no longer separated from the atmosphere but by its cutaneous surface, which is the chorion and the amnios of extra-uterine life; a covering which serves it as a protecting medium; which is being continually destroyed by daily wear, but is at the same time as constantly renewed. But the embryo, which originally appears as a vesicle, simple in structure and in outline, of a spherical form and perfectly limpid, arrives at the complicated forms of the fœtus only by dividing itself, as it were, internally into a limited number of vesicles, which again become sub-divided in their turn, and so on, until each of these vesicles becoming more opaque, hides from us its origin and acquires another name; the vesicles which are directed inwards, assuming subsequently the names of *organs* and of *viscera*: while those which project outwards, in the form of tubercles, are named *members* or *appendices*; organs or members which derive a mutual interchange of nutrition, through the medium of the circulation, and of sensibility which constitutes life, through the more speedy communications of the nervous system. Nutrition and sensibility are thus supposed to be inseparable, they become cause and effect by turns; constituting a grand circle of reciprocal influences, in which it is impossible to fix a beginning or an end! If, having thus attained from the embryo to the man, we desire to descend in imagination from the perfect man to his germ, to reduce this frame of five or six feet in height, by successive deductions, within a dimension which, from its smallness, can no longer be readily appreciable to our sight; if we would decompose, so to speak, the history of each actual organ, so as to represent it to us in all the phases of its anterior development; it would be easy for us, by synthesis, to arrive at the same result as that furnished to us by analysis, and to see by degrees, as by the action of a phantasmagoria, which, by turns, and by the simple play of the same machinery, reduces the giant to the dimensions of the worm, and magnifies the worm to the size of the giant; to see, I say, this human being, this machine so complicated in its structure, so powerful in its construction, so graceful in the variety of its forms and the facility of its movements, become reduced, by merely changing the dimensions of its frame, to the simplicity of a vesicle, in the interior and upon the surfaces of which are implanted other vesicles, which likewise in their turn may develope other vesicles again, and so on, from without inwards, *ad infinitum*. So that the unity is organised as fully as each of its parts, and in the commencement assumes its form; the embryo in the fecundated ovum resembles at first one of its future glands, and man commences with the form of his kidney. Organised unity is but a complication of organs; as in like manner are all the organs of which it is composed, from the greatest down to the smallest; a general organ, as simple in its unity as the smallest of those of which it is composed, and which, in their most minute state, and when almost verging beyond the limits of the sight, are quite as complicated as in their subsequent states.

THEOREM THE THIRD.

To derange the functions of an organised being, however complicated it may appear to us, it is merely requisite that this disturbance affect the most minute of its parts, provided such communicate vitally with the general economy, through the medium of the circulation and of the nervous system.—This fact may be demonstrated by direct experiment. A simple hair which may be plucked out, at the most distant part of the extremities, causes a sudden exclamation and a feeling of pain; the diameter of a hair is at most the tenth of a *millimetre*. A prick of a pin, however slight, may produce the commencement of fever; and if the imperceptible point of a needle introduce into the capillaries the minute portion of poisonous ferment which is capable of adhering to it, this may become the germ of death. This germ is developed with the rapidity of the circulation. The loss or obliteration of a member, however subordinate, modifies to a greater or less extent our customs, our tastes, and the character of our ideas. Man is a different being in his convalescence to what he was while labouring under pain. His unity has been interfered with; it has changed its appearance, by losing one of its fractions; it becomes a new unity. But if there exist an obstruction between the affected part and the general economy, so as to intercept the sanguineous or the nervous circulations, the disturbance no longer re-acts on the system. This hypothesis may be shown by the action of a strong ligature; the tied extremity seems no longer to belong to the living body; it is still attached, but the communication is interrupted; it is contiguous, but does not participate; it is seized with a death, or rather with a lethargy only, if the obstacle be removed in time, but which, if maintained, leads to ecchymosis and decomposition. The flesh, from red, assumes the blue colour of decomposition and mortification; it becomes tumefied from the stagnation of the fluids in the engorged vessels; and under repose all liquids are found to ferment in an abnormal manner.

THEOREM THE FOURTH.

A vesicle, that is to say, an extensible bag, imperforate to our means of observation, attached by its hilum to the internal surface of the maternal vesicle, constitutes the type of the general organ which is called an individual, as well as that of its parts, whatever may be its situation, its dimension, or its age.—The tissue of vegetables is, in general, much more suitable to the direct demonstration of this theorem than that of animals; and we may readily discover by dissection in plants, that the element of their organization may be reduced to a transparent and imperforate vesicle. The tube to which the early anatomists had given the name of vessel and of trachea, is merely an imperforate vesicle which has become developed in length, instead of enlarging itself in other directions.* But in animals direct demonstration may be employed in some cases, and in some special tissues; thus the adipose tissue is very suitable to this purpose. In the fœtus, even the osseous, the muscular and the nervous tissues appear distinctly under the vesicular form, being more or less of an ovoid shape, and more or less elongated in their elementary portions, but subsequently presenting themselves in the adult, under the forms of apophyses and of muscular or nervous fibres. There is not a fibre, nor a gland, which does not commence by being a simple vesicle; nor a vesicle which is not originally a globule, imperceptible to our actual means of observation.

THEOREM THE FIFTH.

Every vesicle developes itself by reproducing its type; it enlarges by begetting others. Its development is but an indefinite series of generations.—By tracing the development of an organised being, vegetable or animal, from the first phases of incubation to the period bordering on parturition, we cannot fail to be convinced that the most compact organ, the most considerable and the least divisible at the adult age, arrives at this structure and these dimensions only by the indefinite reproduction of a vesicle engendering in its interior other vesicles, which again reproduce others in their turn, and so on to an indefinite point. This reproduction may take place, either externally or internally; upon the inner or upon the outer surface of the wall of the maternal vesicle. In the first case, the vesicle swells and enlarges in all its dimensions; in the second instance, it protrudes at certain points, or it may become elongated; and if this external development continue, we have a series of vesicles added end to end, or an articulated tube, divided at each articulation by as many double partitions. To obtain accurate and incontestable conclusions on this subject, sketches and measurements should be made of all that is observed.

Corollary.—We thus find that each newly-formed vesicle is attached, by a point of its surface, to the wall of the maternal vesicle. While thus attached, it enlarges. Now, by reversing our observation, and by reducing progressively each of these vesicles of secondary and ternary formation, we shall necessarily cause them to re-enter, as it were, the walls of the maternal vesicle, so that we may conceive these walls as composed and studded with globules, ready to become developed, under some peculiar impulsive

* See *Le Nouveau Systeme de Physiologie Vegetale et de Botanique*; also, the second edition of *Le Nouveau Systeme de Chimie Organique*, part 3d, vol. 3, 1838.

* See *Nouveau Systeme de Physiologie vegetale et de botanique*.

influence. All the globules on the wall of the vesicle, are not, however, developed simultaneously: some remain for ever in a state of inaction. On the other hand, when we examine the adult organ, we discover that those globules which have received this impulsive action, invariably preserve the same symmetry of position in respect to each other, and the same resemblance of forms, in the various individuals of the same species. On what then does this symmetry in the effects depend, if not on a symmetry in the cause? We shall, in the following theorems, endeavour to ascertain in what this cause consists.

Theorem the Sixth.

Every vesicle, whether vegetable or animal, encloses within its walls one or more spires.—In the insect, we meet with the existence of the spire in the long respiratory tubes, and in vegetables, in the long ligneous vessels, which by analogy, have been named *tracheæ*, and which are regarded as respiratory organs analogous to the tracheæ of insects. I have shown, in the *nouveau systeme de physiologie vegetale*, that the tracheæ were originally but imperforate cells; and that the spire, which seems to distinguish them from all other organs, exists in every vegetable vesicle, to whatever order it may belong, and at whatever age it may be examined. I have traced it in the grains of pollen, in the recent fæcula of plants, and in the fæcula of starch. In my *systeme de chimie organique*, I have also maintained the existence of the spire in all animal cells; I have met with it in the imperforate and vesicular cylinders, which form the element of the muscular system, cylinders which, at an early period, present an exact resemblance to the cells of the vegetable cellular tissue. Subsequently I met with the same spires clearly defined, in the articulations of the *antennæ* of the yellow *larva* of the *thrips*, then in the *antennæ* of the young *Smynthurus viridis*, in those of the grub of the young elm; and lastly, in the hair of the mammifera, which I shall now describe somewhat more in detail. Every hair, whatever length it may attain, presents itself, at its first appearance upon the skin, under the form of a simple little tubercle, of a small ampulliform tuberosity, which may easily be reduced in imagination to the type of an imperforate vesicle, of a globule of the smallest possible dimensions. At a subsequent stage, this becomes a cylindrical vesicle; and on collecting together a number of these little bodies into a bundle, we should, on making a transverse section, form a counter-part of one of those compound fasciculi, which botanists have dignified with the name of vessels, or of tracheæ, in the tissue of trunks and of leaves. The human hair, viewed under the microscope, whether in water, or in oil, is so little permeable to the light, that a black line alone can be seen in its interior, and which seems to be its medullary canal. By placing the object so that its upper part alone comes within the focus of the instrument, we perceive upon its surface a reticulation similar to that of the leaf, the meshes or fibres of which take a spiral direction. It is this reticulated arrangement, indicative of its cellular division, which has so often been mistaken for scales, previously to the microscope being generally adopted in the study of this subject. This net-work may in general be distinguished with great accuracy in human hair, of whatever colour. If, with a powerful magnifier, we examine a hair placed in a layer of water, at the same time reflecting upon it the light of a lamp, and viewing it in different directions, we shall succeed in discovering the infinitely small, spiral turns, which this cylinder contains. Lamb's-wool, examined in water, shows this arrangement still better, although the distances are not so regularly observed. In the hair of the Thibet-goat, which is more transparent, these irregular spires may be readily seen. They are, moreover, most incontestably apparent in the hair of the rabbit, the hare, the beaver, the mole, the cat, and the rat, especially when the hair is placed in a layer of oil.

The most distinct and the most simple animal cell, which it is possible for us to observe in an isolated state, and without the aid of dissection, shows us, then, the same element which is found in every vegetable cell. And as we have met with the same spire in the elementary cell of the muscular, and in that of the nervous, tissues, we are compelled by analogy, to admit of its existence in every animal cell, whatever may be its nature, and to whatever order of functions it may belong.

Corollary.—Every organised cell is then composed of two structures equally necessary to its elaboration and to its development: of a vesicle or external covering, and of one or more internal spires.

Theorem the Seventh.

The spire is the element which presides over the development of the organised vesicle, and over the symmetry of its generations.—On placing in a watch-glass filled with water, and introduced beneath the object-glass of the microscope, a piece of river-moss or weed,—a young filament, scarcely escaped from its germ, and which is more slender than a hair, we shall distinguish in the centre of each of its joints, a green, smooth band, spirally arranged, and which does not present, on its surface, the least perceptible irregularity. On the second or third day, a new spire will have appeared at the same point, and which, although proceeding in a contrary direction, communicates at each turn with its fellow-spire, and shortly forms a kind of network, arranged in squares or curves, according to the age and development of the plant, and which, in different plants, forms so many distinct and perfectly characterised species. But a fact which it is important to observe is, that at each interlacement, there is formed a small globule, which appears to be the pivot by means of which the two spires are joined together at this point. We have said that every organ, however large, that every individual, however gigantic, begins life under the form of a globule: that it is, in fine, but a globule progressively developed; that consequently every globule possesses that within its frame which will enable it, on receiving the fecundating impulse, to become the mammoth or the cedar of Lebanon. The globule of each crossing of the spire of this river-moss is then an organ in germ. On the other hand, we have established that each of the organs which are developed, upon the inner or the outer wall of the maternal vesicle, originally constituted a component part of the wall itself, the tissue of which, as we have previously said, might be considered as formed of globules, laterally arranged. It follows from the foregoing considerations, that the favoured globules which become developed into organs, are those which are fecundated at each decussation of the two spires, which seem mutually to perform the functions of male and female, as often as the development of the maternal vesicle permits them to come in contact.

To render this theory perfectly intelligible, in reference to the structure of the various classes of animals and of vegetables, it would be necessary to enter into too many purely anatomical details; I shall, therefore, refer you for further information on this subject to my works on "*Physiologie Vegetale et Botanique*," and on "*Chimie Organique.*"

Theorem the Eighth.

The product of elaboration of an organ is the sum of the products of elaboration of the various elementary cells, which enter into its organization, and of which it is composed.—An integral being, to whatever order it may belong, is such only from its various parts; deprive it of any appreciable portion and you will change its nature, its dimensions, and its power. So, an organ is not an ideal thing, independant of the organic elements which compose it; such an idea would imply an absurdity and a contradiction. If we have recourse to dissection, we find that any organ, or vesicle of large dimensions, may be reduced into several other organs, secondary vesicles and of a smaller size, which again may be divided into several other tertiary vesicular organs, and so on, until we reach the elementary organ, or vesicle of ultimate formation. The greatest has commenced as the smallest, and has been subjected to the same elaborations; it participates in its nature, as the generating cause participates in its product; but what do I say? This is no longer the producing organ; it is but the bark which clothes and protects the part which elaborates; the elaborating organ is the contained, it is clothed and protected; now, from all these divisions and subdivisions, we see that it is to the latter only, to the elementary sub-division, to the indivisible cell alone, that this quality belongs, in a special and exclusive manner. Such are the numerous microscopic organs which elaborate the secretions; organs of the same elaboration, equal in position, in dimension and in age. In a word, all these microscopic cells elaborate, since they belong to a living tissue; they elaborate the same products, since they are equal and contiguous; the general organ which collects these products, and transmits them to the circulation of the individual, is its common reservoir and vehicle. The product which it transmits is, then, the sum of all these infinitely small products.

Corollary.—If we can appreciate the mechanism of the elaboration of one of these microscopic organs, we shall thereby be acquainted with the mechanism of the elaboration of the compound organ: the one being but the sum of all the others combined.

MEMOIR ON THE BILE.

By BERZELIUS

After having presented the history of our knowledge concerning the bile, and having animadverted on the contradictions which most recent investigations present, Berzelius proceeds in the following terms:—

These circumstances determined me to undertake a new analysis of bile. I am now about to make known, in few words, the results of this analysis. According to these investigations, the most essential and most abundant principle of the bile, is a peculiar body, very soluble in water, of a bitter taste, which has an extreme tendency to undergo metamorphoses in certain circumstances; it then produces taurine, ammonia, and two resinoid acids, which, in combining with the portion of this principle which is left intact, give rise to an acid body, and the latter forms combinations with bases, without any separation of the peculiar principle of *bilin*. It forms the greater part of the picromel of Thénard, and of the biliary sugar of Gmelin; the granular crystallisation of the latter arose from a mixture of salts. Bilin does not crystallise; when pure, it dries into a colourless, transparent mass. It is ordinarily obtained of a yellowish colour; but the latter is owing to a mixture of foreign coloured matter. When left in a warm place, it cracks in all directions; heated to 120 deg. C., it loses water, swells up, and is converted into a white, porous, and easily pulverised mass. It readily re-acquires from damp air the water which it has lost; it re-combines into a mass and gradually again becomes transparent. It is inodorous; but if a concentrated solution be evaporated by heat, it gives out the odour of boiling gelatin. It has an acrid and bitter taste; it always leaves at the posterior part of the tongue a sweet after-taste of licorice, which, however, may vary. Perhaps it belongs properly to bilin; it may, nevertheless, also arise from another matter foreign to this substance, *glycerine*. Bile contains, indeed, oleate, margarate and stearate of soda, consequently, saponified fat, and the bile contains the glycerine which is separated from it; the latter must remain in the bilin, from which it is impossible to isolate it by the methods employed for the separation of the latter. Bilin contains nitrogen, and gives ammonia by dry distillation. It may be inflamed in the air, and burns with a clear, fuliginous flame, leaving a porous ash. It is soluble in all proportions in water and anhydrous alcohol, and insoluble in ether. Its re-action is neither alkaline nor acid, but it forms very soluble compounds with acids as with bases; these latter are decomposed by the carbonic acid of the air. Its combination with an alkali may be completely precipitated by a concentrated solution of a caustic alkali or an alkaline carbonate. This circumstance may be turned to account for freeing it from the salts held in solution if the latter then remain in

the liquor, and may be completely separated from it by several precipitations.

Bilin has, as I have said, a great tendency to undergo alterations. It is impossible to evaporate its aqueous solution to dryness, by heat, without its experiencing a slight alteration; it then begins to give feeble indications of the presence of a free acid. The mineral acids and the mucus in solution in bile very considerably accelerate this alteration. The action of acids, in this case, gives rise to the products indicated by M. Demarçay. Bilin is converted into two resinoid acids, taurine and ammonia. I have given to these acids, which greatly resemble one another in physical properties, the names of *fellinic* and *cholinic* acids. They are sparingly, or not at all, soluble in water; alcohol dissolves them in all proportions; fellinic acid is very soluble in ether; cholinic is only sparingly soluble in it. They form with the alkalis, earth, and metallic oxides, peculiar salts; the alkaline salts are very soluble in water and alcohol, possess the bitterne s of bile, froth in solution like soap, and remain after evaporation under the form of masses resembling extracts. The earthy and metallic salts are insoluble, or very sparingly soluble, in water. The difference of solubility of their salts of baryta, in alcohol, presents the best means of isolating them. The fellinate is very soluble in that menstruum; the cholinate, on the contrary, is almost insoluble in it. At the same time that these acids are formed by the alteration of bilin, they are combined with a portion of that substance, which then enters with them into the composition of their salts. I call these acid compounds *bilifellinic* and *bilicholinic acids*. They are soluble in water; but the addition of a certain quantity of a mineral acid precipitates them from it: if the supernatant liquor be decanted, and if fresh water be added, they re-dissolve.

Ether removes from them a certain quantity of fellinic acid; if the remaining mass, which is richer in bilin, be dissolved in water, and if the solution be supersaturated with oxide of lead, basic bilifellinate and bilicholinate of lead are formed, and separate under the form of a plastic mass, and the excess of bilin remains in the liquor. The result is the same when the latter is mixed in a certain proportion with sulphuric acid. Bilifellinic acid is then precipitated, and the bilin remains in solution with the excess of sulphuric acid, from which it is freed by means of carbonate of lead, lime or baryta. The neutral compounds of bilifellinic and bilicholinic acids with bases are soluble in water and alcohol, and have the bitterness of bile. Their solutions in water froth by agitation.

The mixture of the two acids combined with bilin constitutes the cholic acid of Demarçay, and the principal mass of M. Thénard's resin of bile. If these acids be boiled for some time with hydrochloric acid, they are converted into a neutral isomeric modification, insoluble in water, and sparingly soluble in alcohol, even at the boiling heat; they are deposited from the latter liquid under the form of a white pulverulent substance, not susceptible of combining with bases, and insoluble in hydrate of potassa. I have named it *dyslysin*. But it is possible to bring them to their primitive state by treating them with an alcoholic solution of hydrate of potassa. They are sometimes obtained in another neutral state in the analysis of bile; they are then very soluble in alcohol; but they cannot combine with an alkali so long as the latter is in solution in the water. They combine with it only when their digestion in the alcoholic solution of hydrate of potassa is prolonged until the greater portion of the alcohol is evaporated. Bilin in the pure state undergoes only a very slight alteration by boiling with hydrate of potassa: I have not been able in this manner to convert it into cholinic acid.

Another, and no less remarkable, principle of the bile, is the substance which communicates to it its brownish yellow colour, and whose re-action with nitric acid is so characteristic. If nitric acid be gradually added to a liquor containing the substance in solution, it first becomes bluish; it afterwards turns green, then violet, red, and finally, yellow, or brown-yellow. This re-action may be produced in bile; but it is impossible, in its analysis, to separate from it any peculiar substance which it presents, because the body undergoes changes in the various re-actions. Nevertheless, it is sometimes found suspended in the bile, under the form of a yellow powder; or else it is collected in the gall bladder, and forms a concretion or calculus, which then gives with nitric acid the above-mentioned characteristic re-action. It was by this means that it was possible to study the properties of this substance in the isolated state. I propose to designate it by the name of *cholepyrrhin*.

Cholepyrrhin is sparingly soluble, in most liquids of a fine red-yellow colour, which is rendered deeper by trituration. It is insipid and inodorous; it contains nitrogen in its composition, and yields ammonia by dry distillation. It is very sparingly soluble in water, and communicates to it a pale yellow colour; it is rather more soluble in alcohol, but its solution in it is always very weak. Its best solvent is a solution of caustic soda or potassa; ammonia has little action on it. It absorbs oxygen from the air in this solution, and the yellow colour of the liquid then gradually becomes green. If the solution be still yellow, or already green, the acids precipitate this substance in green flocks, which have all the properties of chlorophylle. I have named it in this state *biliverdin*. It is then no longer cholepyrrhin, but a product of its alteration.

Biliverdin is naturally not the only product of this metamorphosis, but the others are not yet known. It dissolves in bile in the nascent state, in the alkaline combination of bilin, and if it be separated in greater quantity than the bile can dissolve, it renders it turbid, and finally, unites into a mass, easily distinguished from biliary calculi formed of other substances, by the beautiful red-yellow colour, which it takes by trituration. When the bile gradually turns green, this phenomenon is due to the metamorphosis of cholepyrrhin and the formation of biliverdin; this metamorphosis is sometimes operated in the animal body, and in certain animals the bile is always green when drawn from the bladder.

Mucus is a third principle of the bile, which merits peculiar attention in a physiological point of view. It is probably found mixed with bile only after its extraction from the canals and from the gall bladder. A portion of the mucus is only swelled in bile; but it fills it sufficiently to render it stringy, and to make the upper portion of the filament, which is separated in pouring it, return on itself. This portion of the mucus may, however, be isolated by straining, and remains on the sieve. Bile thus strained does not any longer *draw out*; but it contains in solution a portion of mucus which may be separated in two ways. If the bile be mixed with its volume of alcohol of 0·84, the mucus is separated, and may be collected on a filter, without altering the composition of the bile. The mucus may also be precipitated by the addition of a few drops of a free acid, even acetic acid; but then the acid commences by saturating the alkali of the alkaline compound of bilin; then the mucus is precipitated in the state of insoluble combination with the acid, and it may afterwards, by means of an exact proportion of alkaline carbonate, be restored to the state of mucus with its primitive properties. The presence of this body in bile produces a continual metamorphosis, which is sometimes completely stopped, as soon as it is separated by means of alcohol. The color of bile becomes deeper and always more green; it acquires a stronger and more disagreeable odour; it begins to give out white vapors when held over a glass rod which has been dipped into hydrochloric acid; then it contracts an evidently ammoniacal odor, and if it be then mixed with an acid, a plastic precipitate is obtained, which is insoluble in pure water, and little or no free bilin remains in the liquor in which the precipitation is operated; the latter contains, in solution, on the contrary, taurin and ammoniacal salts. Even when recent bile mixed with mucus, is evaporated to the consistence of an extract, the metamorphosis always continues. A bile of this nature rarely contains free bilin, as my investigations have shown me; it presents, besides taurin and ammonia, cholinic and bicholinic, fellinic and bilifellinic acids, two new acids which I have described under the name of fellanic and cholanic acids. In general cholinic acid is the most abundant of all these principles.

These three bodies, bilin, cholepyrrhin, and mucus, are, in my opinion, the most remarkable principles of bile in a physiological point of view. I have also found, after the separation of biliverdin, another yellow colouring matter, which I have called *bilifulvin*. It is a double salt of lime and soda, with a nitrogenous organic acid, which I have called *bilifulvinic acid*. In the isolated state, this acid is insoluble in water and in alcohol; it separates from it in pale yellow flocks, when it is precipitated from the aqueous solution of the salt by a more energetic acid. Is this salt originally a principle of the bile? or is it rather a product of the metamorphosis? This it is impossible to decide.

The following are the other principles which I have found in the bile:—

Extractiform matters partially soluble in aqueous alcohol and in water, and partially in water alone; identical, so far as can be judged from their general properties, with the matters which correspond to them in the blood, but of a deeper yellow, arising from bilifulvin, from which they may, but with difficulty, be completely freed.

Cholesterine,—the best means of detecting the presence of which consists in digesting, for some hours, bile deprived of mucus, with a little dilute sulphuric acid; cholesterine rises to the surface of the liquor in proportion as the bilin is destroyed, and it may be removed after cooling.

Oleate, margarate, and stearate of soda with a little non-saponified fatty matter, from which it is not possible to separate seroline.

Chloride of sodium, sulphate, phosphate and lactate of soda, and phosphate of lime.

From the preceding it results that the ancient comparison of the bile with a solution of soap is not entirely incorrect, inasmuch as it really contains, in solution, a small quantity of soap. But it is not possible to determine with entire accuracy the proper composition of the bile in its primitive state. Nor is it possible, positively to indicate the relative proportions of its principles, since it constantly alters during analysis. It may be added that we are not possessed of very accurate methods of separation. The quantitative analyses given above should be regarded only as approximations, and it may with probability be concluded that bile and blood, at least in the ox, are liquids of very similar concentration.

In my experiments, filtered ox-bile, by evaporation to dryness and by desiccation of the residue at 130 degs. C. until it ceased to diminish, lost 92·838 per cent. of its weight, and left 7·162 of solid substances. The mucus extracted from a portion of the same bile by precipitation with alcohol, represented, after desiccation, 0·231 of a hundredth of the weight of the filtered bile, and left, after combustion, and incineration, 0·026 of a hundredth of the weight of bile, formed of bone phosphate of lime, unmixed with free lime or carbonate of lime. Ether removes cholesterine from the dry residue of the bile; but its quantity does not form more than 0.0001 of the weight of that liquid. The portion of the residue of bile insoluble in alcohol, the extractiform matter with the alkaline sulphate and phosphate, represented 0.4334 of a hundredth of the weight of bile. If we were to admit that the chloride of sodium, lactate of soda and extractive matters soluble in alcohol amount to $1\frac{1}{2}$ per cent., an estimation perhaps too high, there would remain for bilin and cholepyrrhin (the proportion of the latter is very small) 5 per cent. of the weight of the bile.

If now we carry our considerations relative to the bile into the uncertain field of supposition, we may regard it as probable that the bile, at the first moment of its secretion, contains bilin and cholepyrrhin, unmixed with any product of their alteration. It is only gradually and by the catalytic influence of the tissue of the ducts and of the mucus that these products begin to show themselves. In the state of perfect health, the metamorphosis does not make much progress in the body itself, because the bile is not long retained in it; but it continues after it has left the body, and the bile undergoes an increasing alteration producing taurin, bilifel-

linic and bilicholinic acids, biliverdin, &c., so long, at least, as the mucus has not been separated from it. It is for this reason that fresh bile from a healthy bull may be mixed with any quantity of sulphuric acid diluted with 3 or 4 times its weight of water, without precipitating from it, in the space of 24 hours, anything but the mucus in solution. It is evident, therefore, that fresh bile contains so little bilifellinic and bilicholinic acids, that they can remain in solution in the acid liquor. On the contrary, fresh bile always gives a precipitate, weak as it may be, with basic acetate of lead; it is partly formed, it is true, of other substances; but its property of agglutinating into a plastic mass, indicates the presence of basic bilifellinate of lead. Hence it necessarily results that the metamorphosis of bile has already commenced before leaving the bladder. In the present state of the analytical investigation concerning the bile of different spaces of animals, we are constrained to admit that the bile of man and of mammalia is very similar in nature to that of the ox. M. Thenard says, indeed, that that of the pig contains no picromel, but only the resin of bile, which signifies, in other terms, that it does not contain free bilin, but bilifellinic and bilicholinic acids. It is very possible that in certain animals the metamorphosis may be more advanced in the bladder than in others; but it is still more probable that the bile examined by M. Thenard had undergone this degree of alteration before it was analysed. Gmelin found in the bile of the dog considerable less bilifellinic acid than in that of the ox; that is to say, less progress had been made in the alteration.

Gmelin found the bile of birds already green in the bile bladder, presenting different degrees of a fine green. It formed a more dilute solution than that of the mammalia; but his investigation concerning the bile of geese and hens, lead to the conclusion that its composition is the same as that of the bile of the mammalia.

The bile of fishes presented to Gmelin essential differences, compared with that of mammalia. The bile of different species of cyprinus (*Leuciscus, barbus* and *alburnus*), left a confusedly crystallised residue, in which Gmelin discovered a new crystallised body which supplies the place of bilin. This body may be called *ichthyocholin*. It is colorless; it has at first a sweetish taste, but an extremely bitter after-taste; it readily crystallises; it is very soluble in water and in alcohol; insoluble in ether, and appears to contain less nitrogen than bilin, since it gives only slight indications of it by dry distillation. A considerable addition of caustic potassa, or carbonate of potassa, precipitates it from water like bilin; but the free acids likewise precipitate it, although an excess redissolves it; it may be precipitated *de novo* by dilution; it also precipitated from its aqueous solution by subacetate of lead, as well as by the salts of tin, mercury and silver; it appears, therefore, to be capable of combining with bases. Gmelin found, in the ashes of the bile of fish, sulphates of soda and lime, with a little phosphate of lime, but no free alkali; the fresh bile had not an alkaline reaction. It is more concentrated than that of the mammalia: Gmelin obtained from the bile of fish, by desiccation, from 14·3 to 19·3 per cent. of residue. The bile of the *Esox lucius* and of *Salmo fario* left a residue which did not crystallise; it is probable that it contained bilin as well as ichthyocholin, and the presence of bilin prevented the crystallisation of the latter.

The bile of the amphibia has been little studied. Gmelin has demonstrated that the bile of the *Coluber natrix* and of the *Rana temporaria* contains cholepyrrhin. I have analysed the bile of the *Python bivittatus*; in contained bilin,—but no bilifellinic acid,—ichthyocholin and cholepyrrhin with the other ordinary principles of animal fluids. Ichthyocholin is therefore presented in the amphibia.

The physiological purpose of bile is not easily penetrated. According to former investigations and opinions, it was believed that it was mixed with the chyme in the duodenum, to operate a precipitation in it; the precipitated portion formed the excrement, and was eliminated; the unprecipitated portion constituted the chyle, which was absorbed. But this very chemical opinion has not been confirmed by more recent and more carefully conducted investigation. It was then endeavored to give prevalence to the opposite opinion, that the bile is only an excretion, without any other purpose as regards the act of digestion. In different species of animals, the liver was compared with the respiratory organs, and, from this comparison, it was concluded that the former is so much the more developed as the latter are smaller, and that tho diminution in the separtion of carbon from the blood in the lungs, is here compensated by a more abundant excretion of carbon by means of the bile. Several physiologists have tried to tie, in living animals, the common biliary canal to the liver and to the bladder. Brodie* thought that he found, by experiments of this nature on cats, that chyle is not formed without bile; but the act of chylification may easily be disturbed by influences much slighter than the incision of the abdomen and ligature of the biliary canal. Tiedmann and Gmelin made similar experiments on dogs, and did not find in the contents of the small intestine any essential difference from the normal state beyond the absence of the principles of the bile. I have myself made an observation which greatly agrees with this last result. At the age of 18, I was attacked with jaundice, which produced no other suffering than a *dull* pressure in the hepatic region, and which could scarcely be called a disease. The excrements were white, and at the end of a week the skin began to turn yellow. This was the first indication of the disease, and remedies were employed, which effected a cure at the end of 12 days. During all this time, there was no absence of appetite, and I continued my ordinary occupations in and out of doors, without the least sign of fatigue or weakness; however, these symptoms ought to have followed as a necessary consequence if the act of chylification had been interrupted during those 12 days.

If, on the other hand, it be considered, that in most animals the bile is poured into the commencement of the intestinal canal, that it is there mixed with the aliments which come from the stomach, and that, in animals which are provided with a gall bladder, the overflowing of the bile is confined to the time of digestion, we may,—in the conviction which the study of physiology gives us, and which it is constantly fortifying,—in the conviction, I say, that nothing exists in the admirable structure, without a special and well calculated object,—admit, with extreme certainty, that the bile, without being a *sine qua non* condition for chylification, must, however, have an essential influence on the integrity of that function.

That the bile is an excretion is demonstrated by the fact that the excrements of animals contain not only the products of the metamorphosis of bile, but also bile which is not yet destroyed, and which has not undergone a complete metamorphosis.

Finally, bile, evaporated and employed as a medicine, under the name of *bilis babula spissata* deserves to be mentioned. I have observed that it contains bile in a very advanced stage of metamorphosis. This alteration might be greatly impeded by precipitating, before evaporation, the mucus from the bile by mixing it with its volume of alcohol of 0·84, filtering, removing the alcohol by distillation, and afterwards evaporating the bile in a sand bath, until it hardens after cooling. It may then be kept for a long time without alteration.—*Chemist.*

Disease of the Heart and Insanity.—Disease of the heart is not uncommon in cases of insanity. M. Foville says, that at least five-sixths of the patients at his hospital had diseased hearts. Hypertrophy is more frequently found than disease of the valves, and this is what we should be led to expect, when we take into consideration the obstacles to the circulation which the heart has to surmount in mental diseases.

* *Journal of the Royal Institution of Great Britain,* Vol. XIX, p. 341.

QUERIES ON THE ACTION OF CERTAIN MEDICAL AGENTS.

(To the Editor of the "Medical Times.")

Sir,—May I be permitted, through the medium of your journal, to submit the following inquiries for the consideration of practitioners?

First.—In a late number of your publication (p. 116) it is stated that the Germans consider phosphoric acid to be a better tonic than either nitric or sulphuric acid. Could its efficacy, as a tonic, be owing in any measure to its contributing to the formation of nervous matter? The value of quinine as a tonic is well known, and its effects (from the resemblance in composition between that substance and cerebral matter) are attributed by Professor Liebig to its taking a direct share in the formation of brain and nervous matter. (See Liebig's *Organ. Chem.* p. 186.)

Among the most prominent distinctions, in chemical composition, between quinine and cerebric acid (the chief constituent of the fat found in the brain, Liebig's *Organ. Chem.*, p. 184), are these two: namely, that the latter, in addition to its containing phosphorus, contains also a much larger amount of oxygen than the former, (cerebric acid contains 19.5 per cent. of oxygen—Liebig, p. 184, while quinine contains only 8.62 per cent. of the same—Liebig, p. 323.) By the union of phosphoric acid with quinine, both these distinctions would be removed; and, in the phosphate of quinine, we should have a compound, the resemblance in composition between which and cerebric acid, approaches almost to identity. Both these substances have analogous effects on the constitution. Might not their mode of action be also somewhat analogous? and might we not, in their combination, expect to find a powerful remedy in certain nervous affections?

Secondly,—In the number of your journal already referred to (p. 122), it is stated that Dr. Picken considers carbonate of ammonia to be almost a specific in scarlatina. It is a fact wel known to organic chemists, that the gelatinous tissues are not—as is the case with the other tissues of the body—compounds merely of proteine with oxygen, or with oxygen and the elements of water; but that they require for their formation, in addition to those constituents, to have superadded the elements of *ammonia*. In scarlatina, one of those tissues (the skin) is extensively involved. Could the efficacy of carbonate of ammonia be owing, in any measure, to its contributing to the repair of the injury sustained by that tissue?

Would a careful consideration of the following *facts*, in connection, be calculated in any measure to throw light on what is obscure in that affection? viz:—

In scarlatina, a gelatinous tissue (viz., the skin) is always involved.

A frequent sequela of scarlatina is, anasarca, with diseased kidneys.

The chief function of the kidneys is, to eliminate from the system the nitrogenized products of the metamorphosed tissues.

The gelatinous are the most highly nitrogenized tissues in the body.

The seat of anasarca is the gelatinous tissues.

Ammonia is a very highly nitrogenized compound.

Ammonia is an essential constituent of gelatinous tissues. And, lastly,

Ammonia has been considered to be almost a specific in scarlatina.

[Could the foregoing considerations justify the anticipation of benefit, from the administration of carb. ammonia in certain obstinate cutaneous diseases?]

Thirdly, The last subject on which I shall take the liberty of suggesting inquiries is that of phthisis.

If phthisis (as is now I believe pretty generally supposed) be dependant on an excess of oxygen in the system, would it not be a desideratum in the treatment of that disease, to diminish in number the "*carriers of oxygen,*" that is, the red globules of the blood, and thereby the chief channel through which oxygen is conveyed into the system?

The benefit consequent on a loss of blood (whether by hæmoptysis or otherwise) is so well

known in phthisis, that Dr. Cheyne, Sir James Clark, and others, recommend frequent small bleedings as part of its treatment.

MM. Andrel and Monoret have shewn, that the chief effect produced on the circulating fluid, by a loss of blood, is a diminution in the *relative* quantity of the red globules it contains.* Every loss of blood must, however, obviously diminish the *absolute* amount of the nutritive constituents of that fluid which are circulating through the body, and, in phthisis, there is but little reason to expect that benefit could result from such a diminution. Would it not, then, be of importance, if any means could be suggested whereby *the red globules alone* might be diminished, while the other constituents of the blood remained unaffected? Could this be accomplished by the hydrosulphuret of ammonia?

Professor Liebig is of opinion that the power possessed by the red globules, of conveying oxygen through the body, depends on the iron which forms an essential constituent of these globules. In the venous system he considers that this iron exists in the form of a carbonate of the protoxide, which, in the lungs, is converted into an hydrated peroxide. (See Liebig's *Organic Chem.*, p. 265, *et seq.*) The same distinguished philosopher is of opinion, that death, resulting from the inspiration of sulphuretted hydrogen, is caused by the sulphur uniting with the iron of the red globules, and thus destroying their power of combining with oxygen. (Liebig, p. 274.)

Dr. Barker, (Professor of Chemistry to the University of Dublin) in his observations on the Dublin Pharmacopœia, remarks, in reference to the medical properties of hydrosulphuret of ammonia, that, "when taken internally, it is supposed to have the property of depriving the system of oxygen." (p. 186.)—Could this supposed property depend on its appropriating to itself a portion of that iron which would otherwise have contributed to the formation of the red globules, and thus, without actually *depriving* the system of oxygen, producing the same effect, by diminishing in number the channels through which that element is conveyed into the system?

I am not aware that hydrosulphuret of ammonia has ever been recommended in phthisis: would the foregoing considerations justify a trial of its effects?

In the number of your journal preceding that already referred to, it is stated, at page 105, that Dr. Hastings has known much benefit to result in phthisis from the administration of naphtha. This is exactly what we should have been led, *a priori*, to expect. Naphtha is a substance which, from its composition, is peculiarly well adapted to the support of the respiratory process, that is, for combining with oxygen, and thus protecting the system from the action of that element. It should be administered on the same principle that fatty, saccharine, and feculent matters (those non-nitrogenized proximate principles, whose function, as food, it is now well known, is to contribute to the support of the respiratory process, by supplying elements with which oxygen may combine) should at all times form important constituents of the food of phthisical patients: but it could never supersede the administration of any substance calculated to prevent the *introduction* of an excess of oxygen into the system, it being alone able to act on that excess *when introduced*.

Your obedient servant,

HENRY FREKE.

14, Richmond-street, Portobello, Dublin,
26th May, 1843.

Diagnosis of Paraplegia.—When paraplegia originates in disease of the spinal cord itself, retention of urine, or irritability of the bladder, often announces the approach of the disease long before the loss of power in the limbs becomes evident; whereas, in all those cases, in which the paralysis creeps from the extremities along the nerves towards the spinal marrow, the bladder is affected only at a later period of the disease.

* See Lectures by M. Andral, on the compositions, &c., of the blood, published, I think, in most of the medical periodicals during the summer of 1841.

ETHNOLOGICAL SOCIETY.

A paper on the physical characters of the ancient Greeks, by Mr. J. A. St. John, the distinguished historian of "the manners and customs of ancient Greece" occupied the attention of the meeting on the 16th. In the opinion of the author, the people subsequently known to the world under the name of Hellenes or Greeks, were originally called Pelasgi, and came into Europe from a particular point of Asia. A chain of traditions enables us to look back over the double stream of migration by which the Pelasgi flowed into Greece as far as the eastern extremities of the Black Sea, from which point to its source it is concealed by the night of ages. But that source he supposes to have been situated in the fertile plains and valleys of the Hindû Coosh, the original cradle of the human race; at least the traditions of all ancient nations appear to point towards that spot as their first home. The type of beauty prevailing in modern Greece, though differing but little from that which distinguished its ancient inhabitants, may not, in the opinion of Mr. St. John, be generally allowed to enter into our reasonings on the classical model, because from the mixture of races which has taken place, it may be argued that the original Hellenic type has entirely disappeared. We know indeed, historically, that immediately after the overthrow of the democracy, the youth of Athens began to degenerate, partly, perhaps, from the mixture of barbarian blood introduced by the Macedonians, but chiefly from the effect of those vices and habits of mind, which a state of servitude never fails to engender. In various parts of Greece, however, it is still possible to meet with figures and faces of classical perfection, though the women in several provinces are less exquisitely moulded than the men. In the Morea the ladies still deserve the celebrity of their ancestors. They possess a fine oval chin, which is so characteristic of Grecian beauty that, whenever its absence is observed, the countenance is pronounced to be not purely Greek. And so striking is the affinity in this respect, as well as in other points of organization, of the Grecians, Georgians, Caucasians, and Mingrelians, that the author does not doubt their belonging to the same variety of mankind. M. Bory de St. Vincent comparing the Caucasian with the Pelasgian race, observes, that while the average height of the former is five feet four inches (French) the latter does not exceed five feet three inches. This in the opinion of Mr. St. John is mere conjecture, based upon no data whatsoever, and at any rate can only apply to the modern Greeks, for of the general stature of their ancestors we know too little to be able to generalise confidently respecting it. From many passages in ancient writers, however, it may be inferred, that looking at the nation generally they were of moderate stature, differing somewhat in different parts of the country. For instance, in Attica, the women would seem to have been small, light, and delicately formed; those of Laconia, though extremely beautiful, were taller and more masculine; while the Beotian, Otolian and Thessalian women exceeded even these in stature. The same proportions, generally speaking, were observed among the men. Attica furnished few, if any, of the athletæ, who astonished the assemblies at Olympia by their huge bulk and extraordinary feats of strength. These, for the most part, came from the less intellectual parts of the country, often from the colonies, where bodily strength was held in more estimation than wisdom or genius. Contrary to what is the case at present, the majority of the ancient Greeks had black or dark brown hair, with skins of a clear olive tint, slightly carnationed in the cheeks. Extremely fair women, with auburn hair and blue eyes, were occasionally met with; but flaxen, or very light hair, seems to have been scarcely, if at all, known. Ancient Greece, in the most flourishing times of the republic, contained a population falling little short of five millions, though Mr. Clinton, with cautious moderation, states the amount at three millions five hundred thousand; but, as he obviously underrates the population of the Peleponessus and Beotia, Mr. St. John thinks it would be no exaggeration to give the total in round numbers at five millions. At all events, M. Thiersch conjectures that the present kingdom of Greece is capable of supporting a population of five, or even of six, millions; and under the free institutions of antiquity, its capabilities may be supposed to have been tolerably well developed. At present the population is not one-third what it was formerly. The paper drew forth an animated discussion, the various points of interest having been happily placed before the meeting by Mr. Greenough, who presided on the occasion, to which he added a remark of his own, that Sparta was the only place where fine forms were well studied, by carefully arresting the spread of hereditary diseases. The Baron de Bode and Dr. Pineo, R N., spoke from personal observation of the extreme beauty of the women of Greece. The Baron had been three times in Georgia, and described the people as being beautiful as statues; but that there was little expression in the eyes, and but little animation in the person, and their intellect by no means so well developed as that of the red men of America. Dr. Hodgkin confirmed the observations of Mr. Brent, that the well authenticated cases of great feats of strength, practised by the ancients, were equalled in the present day, and that the athletæ of ancient Greece did not surpass in size, or beauty of form, the wrestlers of the North and West of England; in confirmation of which, Mr. Brent handed in a paper containing a statistical account of the weights of sixteen Cornish and Devonshire wrestlers, who played at a match on Whit Monday last, from which it appears that they all exceeded in weight the gladiator, taking their height as the standard, which ranged from 5ft. 3in. to 5ft. 10in., the average height of the whole being 5ft. 9⅛in.; the average weight, without their clothes, 12 stone 8 pounds; whereas the gladiator, in Mr. Brent's opinion, would weigh only 11 stone 6 pounds, at the average height of 5ft. 9⅛in.; while the Hercules at the British Museum would weigh at the same height 14 stone. In consequence of a conversation as to the similarity of the Georgian and Grecian head, the Rev. Richard Garnett remarked that, in respect to language, the Georgian approached the Tartarian variety of mankind rather than the Grecian. The meeting, being the last of the present session, concluded with expressing thanks to Dr. Hodgkin for the liberal use of his house for the Society's meetings during this session, and the hope that members, already enrolled, would exert themselves during the recess to obtain the co-operation of their scientific friends for the next. Besides the members named, there were present Sir James Clark, Bart., Professors Grant and Sharpey, Dr. Andrew Smith, and Mr. Aldam M.P.

The Urine.—M. Morin, of Geneva, in the course of some observations on human urine, remarks that he has had occasion to notice that the opinion of Berzelius that free lactic acid was the cause of the acidity of urine, and the dissolvant of the phosphates of lime and magnesia contained in it, was incorrect, and that, in the majority of cases of healthy and

diseased urine, free phosphoric acid was the cause. He does not, however, mean absolutely to deny the presence of free lactic acid. He has very rarely met with free phosphoric acid without any phosphate of lime being present in the urine.

TO CORRESPONDENTS.

Raspail's Lectures.—*These are intended as a sequent to Serres's Lectures on Normal Organogeny, which we concluded in No. 194. Raspail's writings are all stamped with an originality and depth of research which ensure them extraordinary interest. The present work has caused, we are informed, a very great sensation among French savans, and as not unlikely to give an impetus in England to the branch of science on which it treats, which is but too much needed, we have been induced to select it for publication through our journal. We cannot yet fix the amount of numbers through which the translation will run, but we are enabled to pledge ourselves that the whole work shall be presented to our readers in the* Medical Times *at a less price than the original can be purchased in Paris, a fact which will imply to discerning readers the gratuitous* donation *of twelve or fourteen of our well stored pages weekly.*

College of Surgeons.—*We understand that Mr. Morgan, of Guys, succeeds to the vacant place in the Council of the College of Surgeons, caused by Mr Tyrrell's death.*

J. G *in reference to Dr. Young's paper on Incontinence of Urine, asks that gentleman,* "1st. whether it is possible that the remedy could act in any other manner than by being decomposed "in transitu," neutralising the acidity of the urine, thereby lessening the desire to void it; and 2d., does not the "incontinence" in children generally, *if not always*, proceed from the perpendicular position of the bladder, which as the child advances in years assumes its regular position?"

A. B. *sends us three cases of sudden death in which the Coroner refused to hear medical men as to their explanation of the causes, and asks our opinion as to the propriety of his conduct. We think in every case where sudden deaths might be the result of poison, or unfair dealing, there should be more than a medical examination of a medical witness—we mean a medical examination of the body. Where there is no such possibility, we hold that no inquest should be at all held. This will enable A. B. to reach our opinion on the cases he submits to us.*

F. G.—*We have not published the recipes for depilatories, as we intended, on the ground that none of them are without danger in their use. If any of our readers know of a depilatory which is less corrosive in its action than those in general use, we should be glad to give it publicity.*

Medical Reform.—*We are told by a correspondent, to whom we are indebted, at times, for much useful information, that the abandonment of the Factories' Education Bill makes the chance greater that Sir James Graham will at last introduce a measure regarding the* charters *of the two medical corporations.*

Medicus *must excuse us. Irish excitement may present an analogy to a medical disease, but is not, therefore, entitled to a place in our Journal.*

Carriage Drag.—*We have been asked to call attention to the improvement made in the Carriage Drag, by Mr. Wright, as extremely useful to medical men, who—it is asserted—must find it of some service to be able to stop the speed of a vehicle in the event of the horses taking fright; and to skid and unskid the wheels, without stopping the vehicle, or descending from their seats. These advantages, with others of scarcely less importance, we may inform our readers, are insured by the use of Wright's Patent Drag.*

A Surgeon.—*We published the whole matter of Dr. M. Hall's Lectures. The last was omitted, simply because it was but a resumé of what had been but too frequently repeated in the preceding lectures. With regard to wholesale drugs, we are not in communication with any wholesale houses, and, therefore, cannot mention which are the cheapest. Our correspondent must remember that, besides the price named, there is the duty to be paid, as given in a former number—and a profit to the* intervening *party.*

THE MEDICAL TIMES.

SATURDAY, JUNE 24, 1843.

To know ourselves diseased is half the cure.
YOUNG.

If there were any doubt that commerce is the hot-bed of mental enterprize, a single *coup d'œil* given to Liverpool and its quacks, would remove it. We cannot speak of the state of the legitimate—but whatever is *illicit* in medical practice, there exhibits itself in all the rank affluence of tropical vegetation. A short time since, we travelled thither, to cull from it a shewy specimen of that noisome genus, the *unqualified* quack. In "Dr. Hickson," we produced a variety which, for "size or quality," successfully challenges the rest of the provinces for its like. Needing now a representative of the other genus, the *qualified* quack, we again turn to Liverpool, and, without much difficulty of research, offer from it for our readers' admiration, a huger specimen of quackery than any other town, not provincial, could present them.

The gentleman who occupies the end of the Liverpool see-saw of quackery opposite to that sat on by Dr. Hickson, is a member of our profession, who, after going through the rigid probationary studies of our much-honoured calling, passed muster with the examiners at Lincoln's Inn Fields, and subsequently satisfied the other old gentlemen who hold the keys of life and death in their dingy chambers in Puddle-dock, that he was qualified to act as their deputy. He is at once surgeon and apothecary; and after apprising our readers that he occupies a druggist's shop, with prominent windows—of which his gaudily framed diploma forms a prominent article of furniture—that his name and functions stand out in broadest characters, with all the light upon them a brilliant red lamp can afford, we proceed to let our worthy *brother* (so Coleridge addressed the ass—why, therefore, not we?) speak for himself, and Dogberry-like, but in darker colours, write down his own valuable character.

LIVERPOOL, 76, DALE STREET,
(*Opposite Vernon Street,*)
1843.

LADIES AND GENTLEMEN,

I beg to return my best thanks for the handsome support you have favored me with during the *lapse* of 18 months, *since* I left Roscommon Street, and succeeded to the *Old* Established *Business*, (for 20 years conducted by Mr. PRESTON.)

In respectfully soliciting a continuance of confidence and *patronage*, my endeavours will be constantly directed to the procuring, *regardless of expense*, the best and *most approved* drugs; whilst the prices will be found as low as any *house* in Liverpool, which *confines itself* to sending out *genuine* articles.

The constant passage of vehicles in this *most* central thoroughfare of the Town, renders Accidents of frequent occurrence, and as my *Professional* Services have been *in constant demand*, it *satisfactorily* shows how much the Public have required the residence of a Surgeon in a *conspicuous site* of the neighbourhood.

Allow me further to intimate, that I have been *attatched* (*sic in origen*) to the Public Charities of the Town, *as House Surgeon to the North Hospital*, (!) and Visiting Surgeon to the North Dispensary, and have had ample *experience of becoming* practically conversant with every department of the profession.

I have the honor to be,
Ladies and Gentlemen,
Your obedient humble Servant,
SAMUEL POTTER,
Member of the Royal College of Surgeons, and Licentiate of Apothecaries' Hall, London.

Physicians' Prescriptions and Family Recipes accurately Dispensed with Medicines of the purest quality.—A constant supply of fine healthy Leeches.—Patent Medicines, (!) Drugs, and Chemicals of every description.—*Perfumery*, Spices, Lozenges, &c.—Cupping, Bleeding, &c.—Vaccination, Gratis, (!)—Family and Sea Medicine Chests carefully fitted up.—Foreign orders executed, &c.

N.B.—Squinting Cured by simple incision.

Advice to the Poor Gratis, every morning from nine to eleven.

Mr. Samuel Potter, Member of a Royal College, and Licentiate of the Apothecaries' Company, House Surgeon to an Hospital, and Visiting Surgeon to a Dispensary, has a decent, a *very* decent notion of English grammar and gentlemanly feeling, for a member of a LEARNED PROFESSION, in the year of grace 1843. "His prices are as low as any house in Liverpool." If they be low as his own—or its owner—they are low enough in all conscience, whether he or it "*confine* themselves" to sending out genuine articles or not. Mr. Potter is evidently a philosopher. Jacques-like, he can extract good from every thing. Even broken bones are to him, not only subjects for the reasoning process, but "*satisfactory*" ones. Mr. Potter modestly argues that he is a necessary appendage to "a conspicuous site." By all Old Bailey's sacred memories, we asseverate that he is right. The "conspicuous site" of 76, Dale-street, Liverpool,—or that he now occupies in the quack gibbet of the MEDICAL TIMES—is far below his deserts. The time is quick coming when, after sharing the fate of his "medicines of purest quality," i.e. being "dispensed with"—and of his unfortunate patients, i.e., cured of his moral squint by simple incision, and furnished with advice gratis—he shall reach the altitude attained by his "foreign orders," and be really and truly "executed," in the disgust and contemptuous reprobation of every worthy member of the profession which he disgraces by his connection.

After reading Mr. Potter's circular, we are not surprized to find, on turning to the inventory, (economically furnished us on the other side), that he deals in "soft soap" and sawder, "fine honey" and "bird-lime." Such articles, with ready-made coffins, would seem to be a sufficiently essential appanage to his professional merchandizing: but we must own we were not prepared to expect that this worthy hospital surgeon should ostentatiously exhibit himself as disposing from behind his counter, under the different heads of "drugs, lozenges, perfumery, pickles, sauces, spices, *genuine patent medicines*, and sundries" of "cayenne pods" and "cotton wick," "sarsaparilla" and "Bristol bricks," "Turkey rhubarb" and "Irish glue," "Daffy's Elixir" and "lamp

oil," "castor oil" and "paste blacking," "jalap" and "ochre," "ipecacuanha powder" and "rotten-stone," "Glauber salts" and "bees'-wax,"sasafras and"walnut ketchup," "Cockle's pills" and "Harvey's sauce," "Widow Welche's pills" and "Congreve matches," with "maccaroni," "vermicelli," Seidlitz powders"—all, in short, that is convenient or ornamental, edible or bibitory, repletory or depletory—all that realizeth the promise of making the glad sad, or the sad glad—the empty full, or the full empty!

If Mr. Potter's procedure could be considered an act of mere folly or caprice, the eccentricity of inexperience, or the drivelling of idiocy, we should have allowed it to have passed us as the idle wind of a wanton summer. But under the bad grammar, bad taste, and wretched vulgarity of this appeal, there is visible a sign that there is more of the knave than the fool in the man,—a sordid calculation of pecuniary profits, which stands more chance of being realized than our readers, endowed with more delicate habits of thought, probably surmise. The ex-house-surgeon knows his customers, and has laid himself out for them in a way which, if it disgust the few judicious, will attract the many unthoughtful. He acts on a cool calculation of odds, and deliberately sacrifices principle and professional honour at the shrine of lucre. The worst of the business is, that he stands not alone; he is the type of an increasing, an *alarmingly increasing class*—a circumstance that asks from the profession very serious and very early consideration.

It is impossible carefully to look at our body, as affected by its few last years' history, without feeling convinced that unless some stringent measures be taken, it is near a period when the recreancy of a large bulk—perhaps, a majority—of its members, will make it doubtful whether it shall hold up its head as a profession, or sink down to the level of an ordinary business. If our true position be that of GENTLEMEN, bound by our very membership of a learned profession to seek, to take, no practice by devious or illicit courses—neither begging ourselves into employment on this side, nor obtaining it to the injury of a brother, by offering cheaper terms, on that—neither humbling our sense of personal honour on the one hand, nor weakening the rules which support that of the profession, on the other,—how mournful must be our reflections as, gazing over our body, we find exposed before us so many—some, too, in high places—whose course of conduct is so different—so equivocal, so disgracefully unprofessional? Who that looks over our daily or weekly papers, is unaware of fifty *gentlemen* who, under the pretence of advertising books, advertise for patients? The device is transparent. If the books were intended for medical men, they would assuredly be advertised in the medical periodicals, the only place where their books are unknown. If it were not invidious, we could name in a breath twenty hospital surgeons and physicians who thus sow their money, in the hope of a harvest of patients; but a mere reference to them affords the important deduction, that not only will numbers of our profession, of a comparatively respectable standing, go out of the way to attract patients, but that they will do it in such an obvious manner, as proves them to be careless of the equivocal position they can so deliberately occupy.

This, we know, is a mild form of professional empiricism; but the disease, in all its essential characteristics, is not the less apparent. Exhibited in the quarter we have pointed out, it may be looked on as something worse than an isolated fact:—as producing in more depraved constitutions a worse action, it may be called the *fons et origo mali*, and evidences the existence of a predisposition generally to illicit courses, which demands all our best vigilance. Let the evil be increased—let it even not be repressed—and our profession will be worth no gentleman's choice, and no individual's support. Our excellence is not that of clever traders. Our science has no worse foe either in its means, or its ends, than the mercenary spirit of a grasping commerce. When money ceases to be a subsidiary consideration with us, we cease to be the cultivators of a science. There is no moment in a medical man's career that should not be a period of scientific study: he is untrue to his calling, and false to his patients, when he ceases to take advantage of the rapid progress of improvement. While we hold this disposition to be entirely incompatible with the mercenary and empirical habits against which we are protesting, we may add further, that it is not only on our education that our patients depend—it is on our moral characters. If anywhere the gentleman and the man of honour be required, it is at the patient's bedside. To be useful there, he is less the fee'd assistant, than the friend: he is the depository of the most sacred of trusts; confidence in him is his patients' sheet-anchor, and it is above all things essential, that, occupying such a position, he should be kept free from habits which throw on the mind the suspicion of venality, narrow the heart by the acid influence of avarice, and impress the sick man with the conviction, that he is dealing not with a sympathizing friend of nice honour and refined humanity, but a sharp, calculating man of business, who is thinking how much he can extract for himself out of the transaction. The basis of our utility to society is the source of elevation to ourselves: our self-respect and high position is identical with the best interests of the public, and we cannot be too watchful in discouraging the low-minded fellows, like Mr. Potter, who, by a mishap in the course of events, find themselves in our ranks, and use the privileges they receive from our body to benefit themselves, by degrading it, and injuring us.

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

GERMAN.—*On the Tonsils of Birds.* By W. N. RAPP.

(From Muller's Archives.)

HITHERTO tonsils have been regarded as a peculiarity of mammalia; and even among the latter, these organs of secretion are not universal, being absent, for example, in several of the *rodentia*; besides, there are observed very great differences in regard to tonsils in different mammalia. I have succeeded also in discovering tonsils in birds; but these organs do not lie in the same position as in mammalia. As the pharyngeal termination of the eustachian tube in birds is further raised up towards the mesial line of the base of the skull, so also have the tonsils acquired this difference of position, that they lie near the mouth of the eustachian tube.

The tonsils of birds consist of a thick plate on either side, upon which are observed the round openings of numerous glandular follicles. The posterior border of the tonsils is furnished with white points, directed backwards; sometimes the whole surface appears covered with these scattered projections; for example, in the woodpecker and duck. These points are formed by small elongations of mucous membrane, and have a covering of epithelium. The round openings upon the free surface of the tonsils lead to glandular granules or pouches, which form a connecting layer. In order to have a full view of this organ, the connecting mucous membrane must be removed from the cranium, and then the thick glandular and vascular mass becomes evident. In many birds, for example, the vulture, I found that these cavities, of which the tonsils consist, are not smooth on their inner surface, but present many culs-de-sac, and imperforate tubes, giving them a general spongy appearance. In many birds, for instance, birds of prey, the tonsils manifest on their inner sides a fissure traversing their whole length, in which are observed the larger openings of the glands. This space corresponds in a stricter sense with the tonsils of mammalia. If these tonsils be pressed, there exudes a very tough transparent moisture, in which are seen, by microscopic aid, round granules, as in mucus derived from other mucous follicles, but they have no nucleus, and are smaller than the cells of the neighbouring epithelium. Doubtless, the office of tonsils in birds, as well as in mammals, is to secrete a thick mucus, for the purpose of covering with a slimy liquid those hard bodies which are about to be swallowed. Among birds, the tonsils manifest some peculiarities, but the construction of these organs does not correspond with the genera and species constituting orders in this class of animals. It appears that their formation is more dependant upon the nature of food. I found them most developed in birds of prey. In the falcon, vulture, owl, &c., the tonsils are formed of a thick glandular plate, and are provided with numerous openings. Under the mucous membrane is seen a thick connected layer of glandular bodies; and over this layer, on its inner side, is an extended fissure, in which are recognised larger openings. In the raven, the tonsillar surface is covered with many points which bend backwards. In birds of prey, the posterior border only is provided with such appendages. Among the *passeres*, I found in the starling titmouse, lark, goldfinch, and some others, the tonsils as a glandular plate, which is covered on its surface, but chiefly on its posterior border, with pointed, reversed protuberances. In the swal-

low, the tonsils are deficient, at least they are undistinguishable, from the very profusely studded follicular surface of the mucous membrane of the fauces. In the parrot, the posterior nasal orifices open on either side in a thick membranous fold, upon which terminate slightly numerous, large and round openings, the orifices of mucous follicles, which stand in the place of tonsils. In the woodpecker tribe, the tonsils aro moreover covered with fine points, and form a thick glandular mass, plentifully endowed with blood-vessels. In the hen pheasant, and quail, the tonsils are strewed with white scattered points; on the inner boundary lies a fissure, in which are observed large glandular openings. In doves, only the posterior aspect of the tonsils is supplied with white points. There is no accordance among the tonsils of swimming birds. I did not find a trace of these organs in the cormorant, which lives altogether upon fishes; on the contrary, in the storm-bird, (*Procellaria Leuchii*,) and some others, I found on either side of the common opening of the eustachian tubes, a glandular plate, covered on its posterior aspect with a row of reversed points, and upon this plate are observed numerous openings of glands. In the swan, duck, goose, and *colymbus arcticus*, the tonsils are large, and, moreover, are covered with pointed reversed appendages, and supplied with many round openings, extending throughout the length of the glandular appendages, which produce a thick, reddish yellow, layer under the mucous membrane.

CASES IN WHICH AMPUTATION WAS PERFORMED.

By Mr. FERGUSSON.

CASE 1.—David Owen, ætat. 7, of a strumous habit, admitted 10th of December 1842; had suffered from disease of the knee since he was eighteen months old. From time to time the affection (gelatinous alteration of the synovial capsule, abscesses, chronic inflammation of bones, &c.) had seemingly yielded to treatment, and about twelve months ago the hamstrings were divided to facilitate the extension of the limb, which had become much bent at the knee during the progress of the case. In the course of several months the limb was made almost straight, but acquired no additional strength, and the apparatus which had been used for extension was still kept on to aid the patient in his attempts to support the body on this limb. About six months since inflammation again attacked the joint, and ere long an abscess burst on the outside of the knee. His health now suffered considerably, and the discharge was profuse. A probe passed into the opening came in contact with bare bone.

22. To-day amputation was performed in the lower third of the thigh, with an anterior and posterior flap. Four arteries were tied, and all bleeding having apparently ceased, the stump was stitched and strapped. About three hours after, some blood was observed to trickle from the wound, and a clot protruded between the stitches; these were cut away, and a large mass of blood having been removed, a small artery, which bled freely, was secured, when cold cloths were applied, to check the oozing from other vessels which did not seem to require lifgatures. In the evening, the hæmorrhage having ceased, the cut surfaces, being covered with lymph, were brought again into apposition, and retained by stitches, straps, and a bandage.

23. Has passed a good night.

24. Child doing well; stump not disturbed.

26. Dressings of stump removed; looking well; slight swelling; scarcely any discharge; edges united. New straps applied. A strip of lint, covered with spermacetti ointment, laid along the course of the wound, and a bandage put on.

27. Stitches removed to-day. Straps, lint, and bandage applied as before. At each dressing the bandage is carried from tho pelvis to the end of the stump, great care being taken to bring the soft parts well over the cut surface of the femur.

Jan. 16, 1843. A similar mode of treatment as that above described has been pursued. The stump is now almost healed, and the patient is about to quit the house, having rapidly improved in appearance and health.

Immediately after the operation, Mr Fergusson stated this case had been under his notice for more than twelve months, and from what had occurred within the last six, as also from the disease having been present so long, he had resolved to recommend amputation.—He believed that had he allowed the limb to remain there was great risk of the patient sinking under the constant irritation; and as by the process of extension the head of the tibia had been in a manner dislocated behind the condyles of the femur, it was very doubtful if the limb would ever have been of service; even in the event of all disease ultimately ceasing, he had no doubt that the course which he had pursued would be most to the advantage of the patient. This was the second instance in which he had amputated in the thigh some time after attempts had been made to extend the limb by division of the hamstrings and the application of apparatus. One of these cases had been treated by himself, and in the case above related he had sanctioned the mode of practice. In both cases he had imagined that the original disease had ceased, and although he could not admit that in either of them the recurrence had been induced by the treatment, yet they bore out the general view that he had on such a question, viz., that the practitioner should be very cautious in adopting anything like force to effect the extension, for whether the reappearance of inflammation was attributable to the surgeon's interference, or not, the patient or his friends would be too apt to think so, and thus both the surgeon and his profession might suffer in character. The mode of amputation with a short anterior flap and a long posterior one, he had frequently alluded to on other occasions, and he would now request the pupils to watch the future progress of the case and mode of treatment.—subjects on which he would dwell at greater length on another occasion.

CASE 2.—Thomas Kallord, ætat. 10, admitted 26th January, 1843. Has had disease in the right tarsus since he was three years old. At present the part is more than double the natural size, and there are three orifices on the surface from which there is a constant discharge of matter, and through which a probe can be thrust upon bare portions of the tarsal bones. The boy is small and weakly, but at present is in as good health as he ever enjoys at any time. He has entered the hospital for the purpose of having the foot removed.

28. Amputation was performed to-day in the middle of the leg. A small anterior flap was formed by sweeping the knife in a semilunar direction from one side to the other, and then a large posterior one was made by transfixing in the usual manner. Three arteries were secured; the surfaces were held together by stitches; lint, moistened with cold water, was laid over the wound, and straps were ordered to be applied in a few hours, after all bleeding had ceased. In the evening the edges between the stitches were carefully approximated with straps, and a roller was then carried round the stump.

The subsequent dressings were similar to those used in the preceding case. On the fifth day after tho operation, at the period of dressing, there was an escape of arterial blood, to the extent of an ounce or somewhat more, when the wound was partly opened by the finger, for the purpose of exposing the bleeding vessel. There was no occasion, however, for either pressure or ligature, as the blood immediately ceased to flow. Cold cloths were applied, and in the evening, as there had been no recurrence of the hæmorrhage, the surfaces were again approximated by straps. A constant watch was kept on the stump for several days and nights thereafter, but there was no further cause of alarm; the wound healed rapidly, and on the 25th of February was entirely cicatrised.

With reference to this case it was stated by Mr. Fergusson that when the amputation was performed there was no greater urgency in the condition of the foot than there had been for years before. He had himself seen the boy two years previously, and had then recommended tho operation, for it appeared to him that there was no probability of the disease getting well, and that its continued presence would, in many respects, be prejudicial to the patient. The parents, however, would not listen to the proposal, and he had not seen the case during the interval. A few days before the boy came into the house he had been brought to him, with a request that he would now perform the operation, as both the parents and patient himself now despaired of a cure. Considering that as the disease had been present for seven years; that it was in no respect better than it had been two years before; that this constant source of irritation was checking the boy's growth, retarding his education, and the cause of much trouble and anxiety to his parents, he had not hesitated about the step which he had taken, more especially as he could perceive no means of treatment likely to save the foot. Amputation had been performed in the middle of the leg with the view that an artificial support should be afterwards used, which should permit the free use of the knee-joint.

CASE 3.—Alfred Allen, ætat. 7, admitted Dec. 16, 1842. Was always a healthy boy, though thin and weak-looking, until four months ago, when he was observed to limp in his walk, and complained of pain in the left knee, which gradually became much swollen. An abscess at last pointed in front of the head of the tibia, which was opened about two months ago, and the aperture through which bare bone can be felt, has never closed since. The swelling diminished for a time after the evacuation of the matter, but has again become very conspicuous, more especially on the upper and outer side of the knee, where fluctuation is very distinct. He has now constant pain in the joint, and is much disturbed in his sleep. The cartilages do not seem very tender when they are pressed, but there is so much inflammation around the joint that the parts can scarcely be touched without causing additional distress.

22. Abscess has been opened and a large quantity of pus evacuated. It does not seem that the matter has communicated with the joint; the cavity of the abscess, however, extends above the patella, from one side of the knee to the other. At a consultation to-day it has been decided not to amputate at present, as hopes are entertained that the joint is not seriously affected

Feb. 4. Since last report the symptoms have become more severe, and, as the patient's health is giving way, it has been determined to remove the affected part. This has accordingly been done at the hour of visit to-day, by a method similar to that pursued in Owen's case. Eight arteries required to be secured; four interrupted sutures were used; lint and cold water were applied for four hours, and then straps and bandages were used, as in the preceding cases.

7. Stump dressed to-day; looks well, and apparently has healed by the first intention.

11. All the ligatures have come away to-day, and the stump is nearly healed. The boy's general health improving rapidly.

17. Stump quite healed, and the patient is about to leave the hospital.

With reference to this case it was observed that so long as hopes were entertained that the joint was not irrecoverably affected the amputation was delayed, but at last it became so apparent that the patient's health could not long bear up against such irritation that further delay would have been culpable.

In speaking of both of these instances of amputation in the thigh, Mr. Fergusson took particular notice of the shape of the flaps, the posterior being purposely made considerably longer than that in front. From which ever side the flaps are taken, and whether the operation be by flaps or circular incisions, the posterior or lower side of the stump invariably, in the course of time, retracts much more than the anterior or upper portion, and ultimately the cicatrix is so drawn upwards and backwards as to give the stump a most unseemly appearance, —having the bone projecting in front, with a scanty covering of soft textures. If, however, care be taking to leave the textures on the back of the thigh longer than those in front, the retraction only brings the cicatrix to about the centre of the stump, and then the bone seems properly protected on all sides, and the part has that full and rounded appearance which is so characteristic of a well-formed stump.

In all these examples great care had been taken to secure every vessel which seemed unlikely to close spontaneously. It would be remarked, however, that bleeding had occurred afterwards in two of them. In the first (Owen, amputation in the thigh) it had taken place within a few hours after the operation, and this was a period when it was extremely apt to come on, however mindful the surgeon might be whilst the patient was on the operating table. The shock of the operation, exposure of the patient's body, and of the cut surfaces to the cold air, all tended to lessen the heart's action; but in the course of a short time after the person is put to bed, has probably had some cordials administered, and got warm under the bed-clothes, the circulation becomes excited, and then one or more arteries which had been overlooked throw out their blood, and necessitate the further interference of the surgeon. Such had been the case here, and so often did it happen that in the estimation of some, it formed a good reason for not dressing the stump until all chance of bleeding at this period had ceased. In the other instance of hæmorrhage (Kallord's case) the occurrence had come on at a more unusual period. Secondary hæmorrhage seldom took place until the ninth or twelfth day, but here it had appeared on the fifth. The mode in which it ceased was somewhat singu'ar. It happened, fortunately, at the time when he (Mr. F.) was dressing the wound, and for an instant it seemed so profuse that he had applied pressure with the fingers upon the popliteal artery, which was kept up until he had gone the round of the ward, under the hope that by thus checking the current for a time it might cease to flow from the open vessel when the fingers were removed. This, however, was not the case, for it again flowed freely, and it then became a question what course should be followed. Considering that the union of the wound was still so recent, he had resolved, on the spur of the moment, to open it up again, with the intention of exposing the open vessel, and applying a ligature; but the latter was not found necessary, for the bleeding ceased as soon as the surfaces were separated. This was different from his anticipation, as the current seemed at first too impetuous to be arrested by the mere exposure to the air; he was, therefore, inclined to suppose that the explanation, under the circumstances, was this,—that during the dressing some adhesions had been broken, and thus a vessel sufficient to yield a tolerable stream of blood had been partially laid open, the remaining adhesions preventing its retraction, and that when these had been broken up by the finger the vessel had retracted, and the hæmorrhage had then ceased in the usual manner. With such a warning he had placed a constant watch on the patient for the next two days, as the bleeding might have recurred during the night, and the consequences might have proved fatal.

In all these cases he had been careful at each operation to secure by ligature every artery that seemed unlikely to cease bleeding. Eight had required to be tied in Allen's case, while three appeared sufficient in Owen's, although another was afterwards found necessary. Both of these thighs were nearly of a size, yet eight ligatures were required in one and only four in another! This, however, was easily accounted for, as in Allen's case there was much greater swelling, more active disease, more inflammation, than in Owen's, and it was always found in such cases that the smaller arteries of the thigh yielded more blood than in instances where amputation was required for accidents, or for diseases where the knee was not much enlarged.

It was his general practice not only to secure all vessels likely to bleed for any length of time, but also to apply all the usual dressings which he was in the habit of using on these occasions whilst the patient was on the table. On the latter point there might occasionally be reason for certain modifications, for instances would occur from time to time where the surgeon might apprehend further bleeding, or where, from the continued oozing from small vessels, it might be deemed most advisable to expose the surfaces for a time to the air; but in by far the greater number of instances he was still of the opinion that he had always entertained, that the best plan was to dress the stump at the period of the operation.

With reference to the means of keeping the surfaces in apposition, he gave the preference to stitches, straps, and bandages, as the pupils had seen them used on these occasions; the stitches were introduced in such number as he thought necessary—in one case four or five sufficing, whilst in another several more might seem requisite; these he allowed to remain on the stump for eight and forty hours at least, and where they appeared to cause little irritation he preferred retaining them for one or two days longer. The common adhesive strap he applied between the stitches, so as to cause the most accurate apposition; along the line of the wound he generally put a piece of lint, covered with simple dressing, and over all put a common roller. Sometimes, instead of the two latter, he applied lint, with cold water, especially where he was afraid of oozing of blood, or a high degree of inflammation, but generally the ointment and bandage were to be preferred.

The second dressing was usually on the second day from the operation, but if there was little discharge and no apparent excitement in the stump he often delayed this step till the third, or, occasionally, even the fourth. On such occasions, after removing the bandage and strips of lint, he generally cut two or three of the stitches, and perhaps took off several of the straps, especially if the latter were soiled and stretched, and then applied new straps, clean lint, and a fresh roller. In four and twenty hours similar steps were repeated, and then generally all the stitches and original straps were taken away. From first to last the dressings were as simple as they could possibly be. The straps and roller were of great service in giving support and form to the stump, whose ultimate condition depended greatly on the skill with which they were used; and the simple ointment was solely intended to facilitate the removal of the portion of lint with which the wound was covered. At first, both straps and bandage were applied loosely, but in the course of ten or fifteen days, *i. e.*, after the separation of the ligatures, they were so adjusted as to give both firm support, and form to the part. In the thigh, unless the surgeon attended to the mode in which a stump was dressed, the part might assume a most discreditable appearance, however well it may have been made at first. Usually, in such cases, it was most easy for the patient to keep the stump bent upwards to the pelvis, and therefore it was generally propped up with cushions in this attitude; it was a dangerous one, however, if not properly attended to, as the weight of the soft parts, besides the natural tendency to contraction, caused them to descend towards the pelvis, and then the end of the bone might appear but scantily covered, or might project—even in instances where the flaps had originally appeared of most abundant length. In these cases, then, he carefully inculcated the propriety of holding the soft parts well up towards the end of the stump, before applying the straps and bandage, and also the advantage of beginning the application of the latter close to the pelvis, and bringing it by successive turns up to the end of the stump. After the lapse of three weeks there was little use for the straps, but the bandage should not be given over for many weeks more--it was still useful in giving form to the stump, and was of much greater service in these cases than many seemed to imagine. Towards the final closing of the wound it might occasionally be deemed advisable to use an astringent lotion or stimulating ointment. Such practice had been pursued in some of these cases where the wounds had assumed the appearance of simple sores, but no particular comments on these points seemed necessary on the present occasion.

REVIEWS.

A Practical Compendium of the Diseases of the Skin, &c. &c. By JOHNATHAN GREEN, M.D. Second Edition. London: Whittaker & Co.,

THIS book is chiefly important for the proofs it exhibits of the efficacy of heated air and sulphur-fume baths in the treatment of cutaneous diseases. The work, however, is not confined to this restricted field of research, but comprehends a systematic outline of the medical history and treatment of all cutaneous diseases. Neither is the book a mere compilation, but a well digested compendium of this

important branch of practical medicine, in which the arrangement is simple, the descriptions of disease methodical and generally correct, the treatment consistent with the most approved practice of the present day, and the scholarship creditable to the author. From the miscellaneous nature of the work we cannot closely follow the author, or enter into a minute criticism of what the book contains.

The following view, given by the author himself, will impart an idea both of the arrangement followed up in the work, and of the nature of the subjects discussed :—

Forms of Inflammation of the Skin, and Diseases which appear under these severally.

Exanthemata : Erythema, Erysipelas, Roseola, Rubeola, Scarlatina, Urticaria.
Vesiculæ : Miliaria, Herpes, Scabies, Eczema.
Bullæ : Pemphigus, Rupia.
Pustulæ : Variola, (including Varicella,) Vaccinia, Ecthyma, Impetigo, Favus, Acne, Mentagra.
Papulæ : Strophulus, Lichen, Prurigo,
Squamæ : Pityriasis, Psoriasis, Lepra.
Tuberculæ : Lupus, Elephantiasis Græca, Cancer, Molluscum, Frambœsia.
Furunculi : Furunculus, Anthrax, Pustula Maligna.

Diseases which appear with the elementary characters of almost all of the above orders.

Syphilis.

Diseases which are severally types of new and additional orders.

Pellagra.
Purpura.
Elephantiasis Arabica.
Cheloidea, (Keloide, Alib.)

Original or accidental, unusual states of the skin not referable to Inflammation.

Achroa : Leucopathia, (Albinismus,) Vitiligo.
Dischroa : (Maculæ, Willan) : Lentigo, Ephelis, Chloasma, Nævus.

Diseases of the appendages of the skin, more properly of the parts which secrete and support these.

Epidermis—Ichthyosis
Ungues—Onychia.
Pili—Plica.

As a specimen of the work, the following abstract from that part which treats of *lupus* may prove interesting and useful to the reader :—

Lupus very commonly begins on some part of the face, in the shape of one or more hard, circumscribed, and slightly raised tubercles, of a dusky or livid red colour, and in general of no great size, though occasionally of considerable dimensions, from the moment they attract attention. These, after remaining indolent or stationary for a length of time extremely various in its duration, terminate for the most part in suppuration, when dirty yellowish, dark brown or black, and very adherent incrustations succeed, under which a process of destructive ulceration is established.

For practical purposes and in conformity with what is observed in the progress of the disease under the various aspects it assumes, M. Biett divides lupus into three principal varieties ; first, as it extends its ravages superficially ; second, as it attacks parts in the direction of their thickness or depth ; third, as it is attended with thickening or hypertrophy of the parts affected.

The whole of these different varieties of lupus, it is very necessary to be aware, may, and commonly do, exist together in the same subject ; indeed, it may even be stated that any one of them occurring individually and unmixed is a rarity ; the disease almost uniformly shows a disposition to extend superficially in one part, whilst in another it destroys all the structures that lie between the surface and the bone, and in a third the tubercles are evolved amid much swelling and apparent enlargement of the subjacent and surrounding structures. The skin is the tissue, which, of all others, generally suffers most. The cartilages of the nose come next. The bones are much more rarely affected. The disease, unopposed by every thing like adequate remedial measures, frequently exists for years without any apparent destruction of the osseous frame supporting the parts which are the seat of its ravages. The ossa nasi do, however, suffer occasionally.

The total destruction of the nose is a sufficiently deplorable effect of the continued existence of lupus ; but when large portions of the lips, and still more of the eyelids, are removed, the consequences are lamentable in a tenfold degree. When the lip, especially the lower one, is extensively destroyed in this way, the patient is harassed and distressed by the constant flow of saliva from his mouth, and by the difficulty he experiences in masticating his food and in articulating so as to make himself understood. When either of the eyelids is destroyed to a considerable extent, the patient's cheek is scalded by the passage of the tears over it, and the conjunctiva, no longer adequately protected, soon becomes inflamed, the cornea grows dim and then opaque, and often staphylomatous, so that irremediable blindness follows. Each of these lamentable accidents is, in many cases, remediable to a greater or less extent by means of a surgical operation. Great freedom especially may be used in bringing parts of the lips together which are naturally at a considerable distance from each other ; and the whole of the lower lip has even been successfully supplied by a flap turned up from under the edge of the jaw. The same thing has also been attempted, though with much less success, in regard to a lost eyelid.

The causes of lupus are little known. The disease is seen among children and the youthful most frequently. Young persons of a scrofulous habit have been believed to be more particularly liable to become its victims. But as individuals of the soundest constitution, in the prime of life, and in the habitual and present enjoyment of perfect health, are occasionally attacked, such conclusions are shown to have been arrived at hastily. It is very remarkable too, that a disease so formidable in its tendencies as lupus, and so rebellious to remedial measures, should occur and continue its ravages for months, and even for years, without any perceptible deterioration of the general health, without the slightest acceleration of pulse, implication of the secreting functions or disturbance of the chylopoietic viscera.

The constitutional treatment of lupus is to be conducted in conformity with the general principles of medical science.

Our main reliance in the treatment of lupus lies in the persevering use of topical applications. These are of very various kinds, but the action of almost all that prove beneficial is similar, and is that of caustics or escharotics in general.

When the tubercles of lupus, then, are still unulcerated, they may be gently rubbed twice a day with an ointment of the proto-iodide, or deuto-iodide of mercury, or of the iodide of sulphur, which last has been found, in the practice of M. Biett, the most active of all resolvents in this disease. The action of these remedies must be carefully watched, lest it go such lengths as to do mischief instead of good. The natural tendency of the preparations of iodine appears to be to excite a certain degree of inflammation in the structures with which it is brought into contact by friction. A certain amount of this, indicated by increased redness, tenderness, and heat, is not to be dreaded ; on the contrary, it is during the new action thus aroused that lupus appears in general to be more especially benefitted, and the object of the treatment is even to call it into existence. But if the tubercles continue stationary, increase in size, or break out into open sores under the use of the preparations of iodine, it is always advisable to suspend their use for a time at least, if it perchance become not necessary in some cases to give them up entirely, and to substitute another form of stimulant in their stead.

Under these circumstances the animal oil of Dippel has occasionally been found of singular efficacy. A dossil of lint is dipped in the preparation and passed repeatedly over the affected surfaces once or twice a day, or every other day only, according to the state of irritability of the disease. The nitrate of siver appears to have less than its usual efficacy in modifying morbid actions, when employed in the treatment of lupus. In the earliest stages of the disease, however, this caustic in solution of some strength, may frequently be used with considerable advantage. In the more advanced stages of the affection, it is greatly inferior to the liquor hydrargyri nitrici, or liquid super-nitrate of mercury. The action of this solution is very energetic, and it is essential that it be not applied to too large an extent of surface at any one time,—a space the size of a half-crown piece is fully as much as it ought ever to be brought into contact with at once. It is applied in the same way as the animal oil of Dippel, the parts that are covered with incrustations having been previously freed from them by means of emollient poultices, and fomentations. The action of this caustic is extremely painful ; but the suffering is of short continuance. The eschars it produces are generally thrown off in the course of ten, twelve, or fourteen days.

But experience has shown that every caustic must be held second to *arsenic* in its powers of modifying favourably the morbid actions in the formidable disease of which we are treating. The mildest and not the least efficacious form in which this active mineral can be used, appears to be according to the formula known in France by the title of the *Powder of M. Dupuytren.* This powder consists of one or two parts of the white oxide of arsenic to ninety-eight or ninety-nine of precipitated calomel. To apply this remedy, the parts (and these ought never greatly to exceed a superficial square inch in extent) must be thoroughly freed from incrustations, and, whilst still moist, dusted completely and rather thickly over with the powder, by means of a dossil of cotton wool. This caustic is so mild in its action that it scarcely excites pain, and is very rarely followed by any thing like erythematous or erysipelatous inflammation. The eschar produced by the compound arsenious acid and calomel powder is always very long of being thrown off naturally; its fall ought, therefore, to be solicited by means of softening poultices, the vapour douche, &c., to the end that the application may be repeated.

The arsenical powder in common use on the continent, entitled of *Frere Come,* which consists of a mixture of white oxide of arsenic, cinnabar, and a little animal charcoal, is a more energetic compound, and requires greater caution in its application, than the powder of Dupuytren. But it is invaluable in the more formidable cases of lupus, and frequently proves our sole and last resource in checking the destructive career of this disease. The arsenical powder is generally made into a thin paste with a little water, and spread upon the surface freed from scabs which it is designed to cauterize, by means of a small pliant iron spatula. The size of the surfaces covered with this active poison at any one time must never exceed that of a shilling. Employed in this cautious manner, the use of the arsenical powder is free from all danger. It is, however, very constantly followed by local symptoms of greater or less severity; but these also are more formidable in appearance than in reality. The erysipelas which it excites yields readily to low diet, a few leeches under the angle of the jaw, and the antiphlogistic regimen generally.

The consequences of lupus, and the deformity it occasions, are occasionally to be avoided, and even to be remedied to a certain extent. Thus, when the nostrils tend to close, they must be kept distended during the shrinking of the cicatrices, and for a length of time afterwards, by means of sponge tents, or tube of elastic gum of proper form. All endeavours to prevent this contraction, however, sometimes proves futile ; and it is then not amiss to leave things alone for a time, until all symptoms of morbid action have subsided, and the disease is in every part well. The nostrils may then be re-established by means of the knife, and proper precaution taken against their becoming closed in future, first by wearing an elastic gum tube for a length of time incessantly, and subsequently by introducing it for some hours every day, or every other day, according to circumstances.

PERISCOPE OF THE WEEK.

(Annales de la Chirurgie Française et Etrangere; Annales de Chimie et de Physique; Journal de Pharmacie et de Chimie; Archives generales de Medicine; London and Edinburgh Medical Journal; Grave's Clinical Medicine; Medical Gazette.)

Asphyxia from Resection of the Lower Jaw.—In a communication on the resection of the lower jaw, by M. Bégin, which was read before the Academy of Sciences, the author points out a cause of secondary asphyxia after the operation, and the means of preventing it. His attention was directed to the subject by a case which terminated fatally in the hospital at Strasburgh. Resection of the lower jaw, however extensive, does not generally endanger the life of the patient, either from the abundance of hæmorrhage, the functional importance of the part operated on, excessive pain, or the exhaustion of the nervous system. In all these respects, comprising the immediate dangers of operations in general, this resection is ordinarily favourable. But when the section is carried far back on each side, an accident may happen suddenly, capable of causing immediate death, by the retraction and contraction of the tongue, which may form an insurmountable obstacle to respiration. Delpech was the first to notice this, and his observation has been since confirmed by other surgeons. In one ease, presenting very serious symptoms, Lallemand was obliged to perform laryngotomy to prevent the fatal result. Hence it has been advised to render oneself the master of the motions of the tongue before dividing the muscles which attach it to the jaw, either by causing an assistant to hold it with fingers covered with linen, or by passing a ligature through it, to be held by an assistant. The same accident of retraction of the tongue may take place consecutively and slowly, gradually influencing the functions of the pharynx, and not acting on the larynx so as to cause asphyxia, until at a period when it may not appear any longer to be apprehended, and both surgeon and patient consider the cure certain. The case which drew M. Bégin's attention to the possibility of the occurrence of this accident, was that of a man named Schmidt, 54 years of age, who was admitted into the Clinical Hospital at Strasburgh, with an enormous cancer affecting the lower lip and jaw. The disease which was of six year's duration, was as large as the fist, irregular in shape, ulcerated, extending on the left to the commissure of the lips and on the right to the cheek. There was some enlarged and painful glands under the jaw on the right side, adherent to the periosteum. Though the disease was very extensive, the patient's health was good in every respect, and his determination to undergo any operation to be freed from his malady, invincible. The operation was performed in the usual manner, the lower jawbone being sawn across at the angle on the right side, and at the neck on the left. Primitive retraction of the tongue inducing asphyxia took place soon after the ligature of the vessels, previous to the application of the dressings, from the inattention of the assistant, but was speedily remedied by M. Bégin's drawing the tongue forwards by means of the thread passed through it, thus uncovering the glottis and allowing the re-admission of air. The wound was then dressed, the parts being brought together by means of the interrupted suture, and the tongue fixed at the most elevated point of that which kept the two inferior halves of the wound in contact. The patient at first appeared to be doing well: a tube was passed into the stomach through the nose by which he was fed, and the only annoying symptom was an occasional difficulty of breathing. The sutures having separated very early, the tongue was necessarily fixed to the first dressing, from which no unpleasant consequences seemed to result. Symptoms of suffocation of exceeding severity shewed themselves, however, on the 11th day, increasing in intensity, and the patient died in four hours in spite of the most active treatment. M. Bégin, attributing the fatal occurrence to asphyxia, accounted for it by the muscles which had lost their antagonising power by the section of their insertion in the bone, drawing the tongue and larynx backwards, the latter being further acted on by the stylo-hyoideus, the posterior portion of the digastricus, and by the stylo-glossus, so as to be forced against the vertebræ, and to undergo a movement of *bascule* from below upwards, and from before backwards. The most convex part of the arch of the os hyoideus, and of the thyroid cartilage, will be raised, whilst the cricoid will slide below on the surface of the pharyngeal mucous membrane, covering the vertebræ of the neck. By this change the larynx will become less projecting anteriorly, the glottis be brought into connexion with the posterior paries of the pharynx, and thus asphyxia will ultimately be induced. On examination of Schmidt's body, precisely this state of parts was presented to view by a very careful dissection. The risk of the occurrence of this accident is always more to be feared the nearer the saw is applied to the articulation, and the possibility thereof continues until the wound is healed, and the divided extremities of the muscles have obtained fresh points of attachment on the tissues of the cicatrix. The risk is much increased, generally speaking, by the dressings which are applied, by dragging the skin and pressing on the anterior parts, thus throwing them back towards the vertebral column, with a degree of force proportioned to the amount of structure which has been removed. In such cases, therefore, it is best to be contented with applying a retentive bandage, carefully re-uniting the transverse incisions from above downwards, but avoiding all labored interference with the lateral flaps in a longitudinal direction. The tongue, M. Bégin advises to be maintained *in situ* by the thread passed through its substance, and secured anteriorly to a metallic artificial jaw, until the muscles have obtained fresh attachments. The retentive thread should be constructed of caoutchouc and fastened neither too tightly nor too loosely: in the former case it would be painful and soon cut its way out, and in the latter it would not prevent the mischief it was designed for. M. Bégin has shewn by the successful results of two operations, in which the lower jaw was divided at its neck, that the metallic circle was fully capable of fulfilling the object with which it was used. No symptoms of asphyxia shewed themselves during the after treatment of the case.

Poisoning by Arsenic.—Mr. Bird Herapath, of Bristol, has recently met with a case of poisoning by arsenic, in which he failed in detecting the presence of the mineral by the usual tests in the contents of the stomach and in the viscus itself, or to so slight a degree as not to warrant him as a chemist in asserting that he had discovered the presence of arsenic. Being dissatisfied with the result of his chemical enquiries, he decided on subjecting a portion of the liver to analysis, in which, after carbonizing it by concentrated nitric acid, sufficient evidence of the existence of the poison was obtained. The statement of Orfila, therefore, that arsenic often disappears from the stomach by absorption, and becomes separated from the blood of the portal system by the liver, and that it might be detected there even after all evidence of its presence elsewhere has vanished, has been thus far confirmed. It constitutes a highly important medicolegal fact, affording indeed a means of discovering the poison when other processes have failed. In no case of poisoning, therefore, ought this viscus to be slighted at the post mortem examination, and the same care should be used in removing it as in taking out the stomach and other viscera, for in it the whole evidence may exist.

Presence of Sulphur in Plants.—M. Hurant considers that one of the sources of sulphur in certain plants, is derived from the sulphuretted hydrogen, which forms one of the constituents of the atmosphere. He believes that the experiments of Vogel, in which every other source of sulphur was carefully avoided, can be explained in no other way, and he is further of opinion that the sulphurous smell, which follows thunder, results from the decomposition of the atmospheric sulphuretted hydrogen, water and sulphurous acid being formed.

Gouty Degeneration of the Spinal Cord.—Dr. Graves, in his Clinical Medicine, says, the subject of gouty degeneration of the spinal cord has not been alluded to distinctly by any author with whom he is acquainted, and is, as far as he can learn, quite new. The deductions, therefore, which are drawn from his cases must of course be subject to such modifications as may be derived from future experience, and must remain to be confirmed by future observation. It has long been known that gout may attack the brain, and the existence of gouty paraplegia is well known to practitioners who have studied attentively the progress of arthritic affections. Thus, in a case witnessed by him sometime back in consultation with Dr. Kirby, he prognosed the supervention of paraplegia, at a time when the indications of its approach could not have been discovered by any observer of less experience and sagacity. Dr. Graves is not sure that some of the older authors may not have alluded to gouty affections of the spinal marrow, but as our knowledge of the peculiar state of the brain and spinal marrow, termed *ramollissement*, is comparatively recent, and not dating earlier than the works of Abercrombie, Rostan, and other modern authors, it is obvious that any observations made by the older writers concerning gouty affections of the nervous centres, can have no distinct reference to this lesion.

Ophthalmia Neonatorum.—In the course of a very lengthy communication on the ophthalmia of newly-born infants, as met with in the wards of foundling hospitals, by M. Dequevauviller, the different plans of treatment that have been recommended from time to time, are examined, and the result of the experience at the Hospice des Enfans Trouves, stated.—Twelve cases, in which the complaint was very slight, were treated with saturnine lotion; in eleven the disease was aggravated, and all the twelve died. The medium duration of their remaining in the infirmary was eleven days. Zinc lotion was used in four cases, with nearly similar results; the four children died, the complaint having previously increased in severity in three. The medium duration of remaining in the hospital twelve days and a half. The opiate collyrium was employed in nine cases, one of them being a very severe attack; in three its use was necessarily abandoned, on account of the intensity of the symptoms it excited; of the remaining six, five died without any improvement of the ophthalmia: the other died also, but the inflammation was previously cured. The medium residence in the infirmary of these six was eleven days. Thus emollient or discutient

lotions were employed as the principal remedy in twenty-two cases, not presenting in general any severity of disease, of which only one was cured; and in one-fourth the cornea was diseased. All these children died. The cold water lotion, as practised in the German Hospitals, that is applied every ten minutes at the temperature of melted ice, the eyes being covered with a wet compress in the interim, was tested in twenty three cases; in seventeen of which the disease was confined to the eyelids, but in the other six extended to the selerotical conjunctiva. The treatment was persisted in in thirteen cases, of which three were cured. The disease made such rapid progress in the other ten, that the treatment was necessarily changed. All but one died of pneumonia. The proportion of cures, therefore, is one-eighth, that of disease of cornea occurring during the treatment one-fourth, the proportion of cures by other treatment being six-elevenths, that of diseased cornea two-elevenths, shewing that cold water produces nearly the same results as the other collyria. Leeches were employed in thirteen cases, in eleven at the commencement, and in two during the treatment; emollient collyria were also ordered. In every instance there was considerable tumefaction of the lids, a very marked injection of the conjunctiva, and an abundant purulent secretion. In five instances the swelling continued or increased; in five others it diminished, but did not cease even when the application was repeated, and one was immediately cured. Four cases were treated solely by antiphlogistics; in the remaining seven, in consequence of the rapid progress of the disease, other remedies were had recourse to, which in four cases effected a cure. In the two instances in which leeching was had recourse to during the treatment, the disease continued to advance, and perforative ulceration of the cornea took place. In five cases out of thirteen, improvement was effected by the application of leeches, an effect much more favourable than that obtained from the lotions which had been employed previously. The next remedy of which M. Dequevauviller renders an account, is an ointment of the nitrate of silver, made with one grain of the salt to thirty scruples of lead, from the employment of which some advantage was derived, but its use was abandoned, because, instead of producing the required effect, it acted as a foreign body, and increased the inflammation, or else adhered to the cornea, and cauterized it. A solution of nitrate of silver two, four, six, and even eight grains, to thirty scruples of water, was next employed as an injection, in fourteen cases, in ten of which it triumphed over the ophthalmia, and one was dismissed cured. In four cases it was not of any service. The discharge was generally arrested in two or three days. The objection which M. Dequevauviller raises against this solution is, that however careful the surgeon may be, the point of the instrument may, by an unexpected movement of the child, be driven against the cornea and injure it and thus increase the mischief, or even the solution may produce a slight degree of cauterization of the mucous membrane, and thus complicate the complaint to the disadvantage of the unfortunate little sufferer, whilst the pain that is caused by the application is very great. For these reasons he prefers the employment of lotions of the nitrate of silver, which were tried upon 31 patients after the incompetency of other applications had been fully demonstrated. Four of them died without any change being produced—in nine there was a marked improvement, arrested by death; in eleven the eyes were quite cured, when the little patients died, and finally seven got thoroughly well. The anterior treatment did not appear to have exercised any influence over the termination of the disease. The cures by the nitrate of silver lotions were three times more numerous than by all the other measures. This application was consequently employed afterwards in about 160 cases, of which 25 died, not cured of the ophthalmia, 66 died cured thereof, and 69 were dismissed cured. The medium duration of the treatment was 15 days. The lotion was employed in the following manner:—the discharge having been washed away from between the eye-lids, a camel-hair brush was dipped in the solution, and passed once between the partially separated eyelids. This was done from four to six times a day. The lotion for slight cases was made with two grains of the nitrate to 30 scruples of water; for the more severe attacks four grains were used. No advantage was derived from using a stronger solution. This treatment was continued for at least 24 hours after the entire disappearance of all redness from the conjunctiva, to prevent a relapse, which was very likely to occur if there remained the slightest injection of that membrane. Excision of the conjunctiva did not produce any useful result, and cauterization of the membrane by means of a solution of equal parts of nitrate of silver and water only cured one case out of ten, while in six a diseased condition of the cornea was found two or three days afterwards. M. Dequevauviller recommends this application only in cases of procidentia iridis to cause the adhesion of the hernia with the cornea. Anointing the external surface of the lids with Neapolitan ointment and extract of belladonna appeared to do good in one case out of ten; revulsives, and the local application of the unguentum hydrargyri oxydi rubri were equally inefficacious. The complaint of which M. Dequevauviller has furnished the ample report from which we have abstracted the preceding notice, appears to have been an epidemic in the wards of the Hospice des Enfans Trouvès, and to have been complicated with maladies of exceeding fatality, the dangerous consequences of which were much advanced by the crowding the diseased infants in the wards of the infirmary, the continual risk of infection, and the necessary bringing up by hand; necessary at least while the ophthalmia lasted. From these causes only can we explain the fearful mortality that attended these cases, and knowing this we cannot but blame the system of experimentalising so common in our continental brethren, and which has here been carried on to an enormous extent even, so to speak, within the very portals of the kingdom of the grim King of Terrors. We feel that we are fully warranted in asserting that many a life has been sacrificed to this spirit of experimenting needlessly, and under circumstances when such a spirit should not be indulged. In this instance it was manifestly of the utmost importance to cure the little patients as rapidly as possible, with the double view of abstracting them speedily from an unhealthy and infectious neighbourhood, where they were continuously exposed to danger of fatal diseases, and of restoring them to their nurses for that nutrition which alone could give them the *vis vitæ*. Besides, by effecting the cure speedily, there would naturally be less infection in the atmosphere, and the other cases in the wards would consequently be less severe. But we fear that we preach in vain; a false spirit of investigation will never be exorcised, until sad experience and solemn thought have convinced the experimentalist of the error of his ways. Taking then the report as it is, and availing ourselves of the information thus painfully procured, we proceed to examine into its real value, having reserved all comment on it to this place, being desirous of setting before our readers the account of the various modes of treatment exactly as furnished by M. Dequevauvillers, uninterrupted by any comments of our own. We must confess that notwithstanding the evident pains bestowed upon its production, and the statistical form into which it has been thrown, (which appears to be fashionable at present) we are far from being satisfied with the report. We find cases of ophthalmia mentioned as treated by various plans; some of them recovering, some stationary, some retrograding, and nearly all dying, but, with one exception, no account of the cause of death, no notice of the general symptoms, and a very slight account of the disease itself. We should have been informed of the state of the eyes and lids at the time the respective plans of treatment were adopted, and also we should have been furnished with a detailed notice of the general health of the little unfortunates, and then some idea might have been formed of the real value of the remedies employed. At present the report is imperfect and inconclusive, the only thing that can be drawn from it being that emollient and discutient applications are but of little use, while astringent lotions, as solutions of the nitrate of silver are of permanent advantage. This piece of information, however, unfortunately is not new; we believe the profession has been in possession of better facts, because more clearly detailed and demonstrated, in support of the value of the local application of the nitrate of silver than those brought forward by Dr. Dequevanvillers for the last 15 years. Not having seen this ophthalmia in an epidemic form within the walls of a foundling hospital, we will not pretend to give an opinion as to the modifications it may undergo under such circumstances, but as a sporadic complaint, we have seen some hundreds of examples, and never yet saw a case which did not speedily yield to the local application of the nitrate of silver made into an ointment--by far the best form of using that potent remedy. The strength of the ointment we have always used is that employed by Mr. Guthrie, by whom it was successfully introduced in 1827. It is made by pulverising ten grains of the salt exceedingly fine, so that not the smallest granule shall be left, then carefully incorporating it with a drachm of lard, slowly mixing with it about 15 drops of Goulard's extract. A slow decomposition gradually takes place, and after a time the ointment becomes of a black colour: it is strongest when fresh made, but is still powerful if used when two years old. Previous to employing it, all the discharge must be carefully washed out, after which a small portion is to be introduced on the end of a probe, and left between the eyelids, which should be gently rubbed, so as to diffuse it over the eye. This may be repeated every day, or every other day, and has never yet failed in our practice to effect a cure, and that right speedily. It will be seen that this ointment is infinitely stronger than that which our reporter condemns. We are inclined to think that his ointment was badly prepared, for if carefully made and applied, it could not by any possibility have done harm. Nor are we inclined to pin our faith on the validity of the objections to the use of the nitrate of silver injections, the only real one being the pain caused by it, which, however, is not protracted except in certain excitable persons. Accidents with the instrument cannot happen except in the hands of a careless unaccustomed operator. The great thing in treating this disease is to

keep the eyes clear of the discharge, which in itself will keep up the disease. It should be washed out every hour.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Friday, June 16th, 1843.

John Baxter Langley, Edmund Bullock, John Hooper, Patrick Mc. Intyr, Edward Harrison, Henry Nathan, Samuel Milnes Marshall, George Royde, Thomas Seaman Henley, John Warwick, John Duke, Abraham Kidd.

ADVERTISEMENTS.

DR. VALENTINE FLOOD, Author of the Surgical Anatomy of the Arteries, of Hernia, of the Nervous System, &c., continues to prepare pupils for the Royal College of Surgeons, at his Chambers 7, Huntley Street, University College. The subjects of these examinations are amply illustrated by drawings, preparations, casts, and models.—Terms Five Guineas, or One Guinea per Month. Apply between 11 and 12 o'Clock.

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SEDATIVE SOLUTION OF OPIUM,

First prepared at Patna, in Bengal.

THE great merit of this Preparation is its peculiar freedom from the noxious properties of Opium, and has, therefore, been found available in cases where other forms have been inadmissible, from its not disturbing the nervous system. The rest procured through its instrumentality is divested of the heaviness and stupor usually the effect of Opium, and the patient, though taking it continuously, is left in free possession of his faculties. It has for several years been supplied to the H. C. Dispensary, by order of the Medical Board of Bengal, from its being found to meet Cholera in India beyond any remedy that had been applied to that fatal disease. Captain Jeremie, from whose formula it is prepared, is well known to scientific persons as the talented improver of the Patna Opium. It will be found not to constipate the bowels, and to keep any time in any climate. It is exceedingly powerful in Cough, especially Consumptive Cough, wherein many have found it a great blessing, in Influenza, Gout, Tic Douloureux, Cholera, and Bowel Complaints, Rheumatism, and Cancers, in Accouchement, and all cases where Opium may be desirable. The exceedingly innoxious properties of the preparation have been proved by infants of a few weeks old having taken it without any cerebral disturbance. The testimonials of many talented Gentlemen of the Profession are on the envelopes of the bottles; a few only of the names are given here of those who have approved, viz:—

Medical Board of Bengal.
Sir Phillip Crampton.
Sir David Dixon. Physician to the Royal Naval Hospital, Plymouth
Dr. Cookworthy, Physician to Plymouth Dispensary.
Dr. Watson, Physician to Middlesex Hospital, London.
J. G. Perry, Surgeon, Foundling Hospital, London.
Dr. Rae, Royal Hospital, Chatham.
J. R. Martin, Esq., (late of Calcutta,) Grosvenor-street, London.
Dr. Jackson, late Apothecary-General, Bengal.
Dr. Graves, Meath Hospital, Dublin.
Dr. Hannay, Professor of Physic, Glasgow, and Physician to the Royal Infirmary.
Dr. Yonge, Dr. Hingston, } South Devon Hospital.

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Reform the State, with voice elate, let politicians shout;
Reform the Lords—Reform the Church—Reform the Land throughout;
Reform your house, your plans, your purse, your ailments, and your ills;
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In such as all who see admire, for Three Pounds Twelve and Six.
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	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
20	0	18	2	0	19	2	1	0	3	1	1	5	1	2	8	1	18	2
30	1	3	9	1	5	2	1	6	8	1	8	4	1	10	0	2	10	5
40	1	11	10	1	13	9	1	15	10	1	18	1	2	0	6	3	8	3
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30	1	6	4	1	12	2	1	19	1	2	7	4	2	17	6
40	1	16	1	2	4	4	2	14	6	3	7	3	4	3	4
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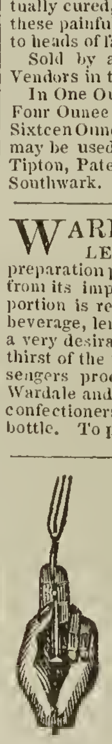

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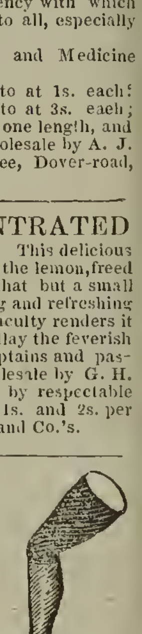

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Jan. 15, 1839.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 197. Vol. VIII. LONDON, SATURDAY, JULY 1, 1843. PRICE FOURPENCE. Stamped Edition 5d.

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SUMMARY.

A COURSE OF LECTURES ON ORGANIC CHEMISTRY.

Delivered in the Theatre of the Royal Institution, by PROFESSOR BRANDE, of Her Majesty's Mint, F.R.S., L. & E., &c. &c.

LECTURE XII.

I propose devoting this lecture to a short review of the principal phenomena of vegetation and of the chemical functions of animals, and thence to trace the mutual dependencies of the three kingdoms of nature. It is obvious that inasmuch as herbivorous animals live on plants and carnivorous animals on flesh, that vegetables must be the ultimate source of the nourishment of both tribes; and, again, that vegetables are sustained by the inorganic compounds which they find in the atmosphere and the soil; by water, ammonia, and carbonic acid; of these latter the ultimate elements, it is true, are carbon, hydrogen, oxygen, and nitrogen; but plants can no more live on these than animals can live on water, ammonia, and carbonic acid, substances which are, as it were, formed and prepared for vegetable nutrition by the decay and decomposition of bodies of organic origin: so that looking at the matter in this light, that constitution of the air and soil which is required for vegetable growth is referable to the functions of living, or to the decay of dead organised matter; without these, vegetables could not exist; nor could animals exist without vegetables, for they, by their functions and substance, contribute that which is essential to the functions and food of the whole animal creation: what I wish, therefore, chiefly to explain to day is, the philosophy of these mutual relations and dependencies.

I have dwelt already at much length on the composition of the atmosphere, of soils, and of manures, and have endeavoured to shew you on several occasions, those chemical and mechanical conditions belonging to each of these as concerned in our present inquiry.

The principal ultimate elements of plants being carbon, hydrogen, oxygen, and nitrogen, we must first enquire whence and how they obtain these. Now, since carbon in one form or other, is an abundant ingredient in most soils, a copious element of *mould*, or as it has been more scientifically denominated *humus*, it was at one time supposed that this humus was the chief source of the carbon required for vegetable growth, and that, therefore, soils abounding in soluble forms of humus would be the most fertile: but more accurate inquiry has taught that the very reverse of all this is the case, and that where soils contain much brown soluble extractive matter they are uniformly sterile; of this a peat bog, and the effects of the waters which run from it, furnish a good instance. The fact is, that the way in which the soil or humus contributes carbon to the plant is less direct; it contains organic matter in such a state as by the action of the oxygen of the air to yield carbonic acid, and it is in this form of carbonic acid, and not in the more palpable and gross state of extractive matter, that the plant may be said to derive its carbon from the soil. But the fact, as we shall afterwards shew, is, that very little carbon is thus furnished to the plants; it is from the atmosphere through the medium of the leaves that the great bulk of this supply is derived; and hence the great importance to the vegetable physiologist of all that relates to the constitution of the great aerial ocean which surrounds our planet, and upon which the existence of all living things is entirely dependant. When we reflect upon all that goes on in the atmosphere, upon the loads of matter that are constantly in the act of abstraction from and addition to it, one of the most remarkable and, as at first sight it would seem, inexplicable circumstances is its uniformity of composition; its oxygen and nitrogen always and every where bear precisely the same relation to each other; its other ingredients, its water, carbonic acid, ammonia, and so forth, vary, but only within certain definite limits; and every thing seems to have been ages ago, from the beginning, precisely as it is now: we can at all events, in reference to this question, go back at least 1000 years, for air bottled up in Pompeii was found just the same as that which at this moment surrounds us, yet enormous quantities of carbon in the form of carbonic acid, are yearly, I may say, daily, pouring into it, derived from various sources, but chiefly from the respiration of all animals, from combustion of coals, wood, oil, gas, and many other things, from volcanic vents, from putrefactive and decaying processes, from fermentation, from natural sources almost innumerable; and yet, not more than an average of a thousandth part of carbonic acid is any where discoverable in it. The fact you will find to be that vegetables use up these great supplies of gaseous or atmospheric carbon: whence, for instance, the carbon of a huge oak, or elm, or beech, amounting, may be, in a single tree, to many hundred-weight? it cannot have come from the soil, for this, if examined, is found to have sustained an increase, instead of diminution, in its carbonaceous contents by the fall of the very leaves of the tree; it must, therefore, have been withdrawn from the atmosphere, and this by that slow and silent, but sure operation of the leaves, the discovery of which we owe to Priestley, and to the general results of which I have already adverted when speaking of the sources of oxygen. You will recollect that the great bulk of a tree is wood, and that wood is a compound of about equal weights of charcoal and water; now the relative quantity of oxygen in wood is less than that in carbonic acid, so that plants must not only absorb, but also decompose carbonic acid, and throw off, as useless to them, a large quantity of oxygen: you have, in fact, seen that this is the case; that they do this under an extraordinary influence of light; and that the carbonic acid held in water may be thus decomposed as well as that in air; in short, the appropriation of carbon, and the evolution of oxygen, is one of the great functions of vegetable life; it is also proved, that during this evolution of oxygen, plants increase in weight beyond that which can be referred to the retained carbon; this, we shall find arises out of the assimilation of the elements of water and of ammonia.

It has sometimes been asserted that it is impossible that the carbon of plants can be really derived to this enormous extent from the atmosphere, for that the whole atmosphere of the globe, containing, as it does, only a thousandth part of carbonic acid, and consequently very much less than a thousandth part of solid carbon, would be utterly inadequate to the presumed supply; but chemical physiologists have taken the trouble to calculate the amount of carbon thus available, and have found it abundant; for, as the weight of air on each square foot of surface is 2216 lbs., and as the diameters and surface are known, the whole weight of atmosphere is thence deduced; and as of this, 1 part in 1000 is carbonic acid, containing 27 per cent. of carbon, so it appears that the quantity of carbon contained at one time in the mass of the atmosphere is not less than three thousand billions of pounds. There is another circumstance which in speaking of the uniform consumption of the atmosphere must not be overlooked,—namely, the provisions which exist for the insurance of the perfect mixture of gasses of different densities, and the influence of changes of temperature and of winds in agitating and blending every part of this immense collection of aeriform matters; so that in the parts of the earth most densely populated there is no accumulation of carbonic acid, nor does oxygen preponderate under the influence of the perpetual verdure of the equatorial regions; dry air and damp, heavy and light, pure and impure, are speedily and readily diffused through each other, and when once mixed have no tendency to separate.

Those chemical actions of plants which depend upon their vitality, appear intimately connected with the relations of chlorophylle to light; they go on almost exclusively in the day time and in the green parts. As soon as young plants break the ground they begin to acquire colour from above downwards, and then the power of assimilating carbon, and of forming wood, really begins. In the dark, a certain portion of oxygen is absorbed by plants, consistently with ordinary chemical agencies, and unconnected with their vitality; thus, their oleaginous secretions may become converted into resins or acids. In the same way, too, and from purely mechanical causes, they may transpire carbonic acid, that is, the carbonic acid which the sap had taken up in the day time from the air by the leaves, or from the soil by the roots, makes its escape unchanged; whereas, as soon as daylight returns, its decomposition into oxygen, which is evolved, and carbon, which is retained, is resumed. The proportion of carbonic acid which young seedlings and plants without leaves require, is probably supplied by the soil, for, as has already been observed, humus, in a particular condition, is capable of slowly contributing carbon to the oxygen of the air; but humus, and mould into which it degenerates, are both susceptible of the mechanical absorption and retention of carbonic acid, moisture, and ammonia, even though they may have no actual power of generating carbonic acid; and by the exposure of new surfaces of the soil to the air, all these effects are promoted, as well as the decomposition of certain organic matters blended with it: it is in this way that tillage tends to the formation of carbonic acid. When the leaves are perfected, the functions of the root become less important, and the gigantic foliage of warm and tropical climates is often associated with a root so insignificant as to form a mere attachment to the surface rather than an organ of absorption. We can now see how various forms of carbon, such as charcoal and powdered coke, may operate favourably upon the crop, not, namely, by any direct communication of carbon or carbonic acid, but from their absorbent and retentive power in respect to atmospheric nutriment. We must also remember that another, and probably important function of the roots, is that of excretion, and that soils may thus become impregnated with matters which, though inimical to the growth of the crop that has produced them, may be useful and salutary to other plants.

Now, as to the assimilation of *hydrogen*. This we may suppose in some cases to be effected in the form of water; thus, in order to form wood, starch, gum, and sugar, the carbon derived from the carbonic acid of the atmosphere may possibly combine with water, in which case, for every six parts of carbon and nine of water so employed, sixteen of oxygen would be evolved or secreted by the leaves. It is, however, more probable that the action here is not quite so simple, but that the water, instead of being directly assimilated, is decomposed, that its hydrogen decomposes carbonic acid, forming water, and transferring carbon to its

oxygen; in this case the same relative proportion of oxygen would be ultimately evolved. This kind of action is more consistent with what we know of the general chemical influences of light, than the other. It is obvious that hydrogen must be assimilated in all cases of the formation of wax, oils, resins, and such compounds as contain it in excess, and it is very unlikely that the whole of this should be derived from ammonia, so that water can be its only source, and if so, a part of the oxygen which plants throw off, must be derived from such decomposition of water. We may further suppose that in the formation of hydro-carbons and caoutchouc, all the hydrogen of the water is assimilated, and the whole of its oxygen evolved.

In reference to the vegetative assimilation of *nitrogen*, ammonia and its compounds require particular attention. I have repeatedly adverted to this source of nitrogen, and have given reasons for supposing that although small quantities of that element may in some cases be derived directly from the atmosphere, it is to ammonia that we are to look for its chief supply. There are many peculiarities about ammonia and its compounds which now press upon our notice, such as its extreme solubility in water, as also of its salts; the circumstance of the elements of carbonate of ammonia being those of organic matter, namely, carbon, hydrogen, oxygen, and nitrogen; and the general metamorphic susceptibility of ammoniacal combinations and mixtures. We may also refer to ammonia as a source of *hydrogen* in plants, especially in those which abound in gluten, albumen, and those other isomeric azotised bodies which I formerly dwelt upon. When we reflect upon the millions of animals which die annually, we can have no difficulty in referring the supply of nitrogen and its compounds to that source; abundance of ammonia and its salts, and of other azotised products, being thus transferred to the atmosphere, where, from their solubility, they cannot long remain, but are carried down by rain into the soil, or absorbed by its moisture. This evolution of ammonia will be most abundant in populous places and large towns, where dead, decaying, and putrid organic matters must necessarily accumulate, but the diffusiveness of gases and vapours, and the other causes which prevent inequality in the composition of the mass of the atmosphere come into play, and equalize their distribution over the globe.

The importance of ammonia is at once seen by reference to the activity or value of manures, which are effective in proportion to the quantity of ammonia, or its elements, which they contain: guano, the refuse of gas-works, ammoniacal salts, azotised excrements, dung of all sorts, furnish instances; the nitric acid found in some plants is also probably a result of the oxidizement of ammonia, for nitre is found in the sunflower, in burrage, in chenopodium, in tobacco, and many other plants, growing in soils perfectly free from all traces of nitre. You will observe how the transformation of mixtures of ammonia and oxygen, and of cyanogen and oxygen, into nitric acid, of which I gave you several in a former lecture, bear upon this subject.

The importance of preserving and fixing ammonia, and of preventing its waste, cannot, in an agricultural point of view, be too strongly insisted on: carbon and hydrogen, in a fit state for vegetable assimilation, are sufficiently abundant and omnipresent; but nitrogen is comparatively scarce and local, and you will find the quantity of food which animals require is greatly dependent upon the proportion of nitrogen which it contains; hence the high nutritive powers of wheat, pease, and other things abounding in azotised proximate principles; hence the low sustaining power of rice, as opposed to wheat, and of vegetable food opposed to animal; hence the heaps of food which vegetable-eaters require, and the inefficiency of potatoes as compared with wheat, and the fallacies which in Ireland prevail in these matters. There can, therefore, be no doubt, that it is very bad management to suffer heaps of manure to exhale the greater part of their nitrogen in the form of ammonia, before they are ploughed in, as well as to allow lime to generate and expel ammonia in the same careless way. The great business of the agriculturist is to economize ammonia; his produce is not like that of the arboriculturist, chiefly dependent upon the fixation of carbon and water.

There are certain manures and dressings of known efficacy, but of which the mode of action is obscure; this, however, may, in some instances, be satisfactorily referred to the interference of ammonia, and to its fixation. Carbonate of ammonia, is a very volatile salt, and if existing in the soil, would soon be lost by evaporation; but where sulphate of lime is, at the same time, present, a double decomposition would ensue, and carbonate of lime and sulphate of ammonia would result, and the latter is a comparatively *fixed* salt: it is thus that gypsum, or sulphate of lime, may act beneficially, though inasmuch as that salt is contained in some crops, it may sometimes itself be useful as a food of particular plants. An analogous double decomposition would ensue on the application of chloride of calcium or muriate of lime, which, with carbonate of ammonia, would yield carbonate of lime and sal-ammoniac, which is also a comparatively *fixed* ammoniacal salt.

In many of the applications of ammoniacal salts, which have lately been proposed as manures, a difficulty arises out of their solubility; so that before they become available to the wants of the plant, they have been washed out of the soil; and hence the great advantage of those applications which are little soluble, and which, at the same time, by decomposition, or by the action of lime, and other substances, may be made gradually to develope ammonia: hence also the advantage of mixing the soluble ammoniacal salt with certain other substances, by which they are protected from the immediate solvent agency of water, and so become slowly blended with the soil. There are also many substances which have a peculiar absorptive power in regard to ammonia, taking it from the air, and retaining a certain quantity of it in their pores, or by adhesion. This is the case with burned clays, sundry ferruginous minerals, and many forms of charcoal. It must be remembered that in all cases of the use of gypsum, a due degree of moisture is indispensable, and that the manures in which it is concerned will be inefficient on dry lands.

Having said thus much in reference to the sources of the carbon, hydrogen, oxygen, and nitrogen, those leading and essential elements of all fabrics and tissues in which vital actions are carried on, I must recur in the next place, to the necessity of other substances in the growth of plants, which, though performing somewhat secondary duties, are yet of great importance: these have frequently been called their *inorganic* constituents, and a knowledge of their nature and proportions is often derived from an examination of the ashes which different plants leave after combustion. Thus, silica and potash are found in the grasses; phosphate of magnesia in wheat; and where, by burning vegetables, we obtain alkaline and earthy carbonates, we may generally infer that their bases, such as potash, soda, lime, and magnesia, had previously existed in the plant, combined with some vegetable acid destroyed by the combustion: in the ashes, however, we often find abundance of inorganic salts, especially sulphates and phosphates.

[In illustration of this subject, the glass or silicate of potash remaining after the burning of a hay-stack, the carbonate of potash and of soda from wormwood and salsola, the sulphate of potash from certain weeds, and the phosphoric salts from burned wheat, were shewn.]

The *acids* of plants are very various; sometimes free, sometimes existing as supersalts, sometimes neutralised; and it would appear that, in some cases, one base may be substituted for another, and that when the requisite inorganic base is absent, the vegetable acquires the power of itself elaborating a substitute: thus, in opium, meconic acid is combined with different proportions of morphia, codeia, and narcotina, the quantity of one increasing as that of another decreases: potatoes grown in a cellar, out of the reach of potash, form the organic alkali, solania: in the cinchonas, the kinic acid is sometimes combined with quinia, sometimes with cinchonia, and sometimes with lime. So, also, we find in regard to the acids of plants, that one may replace another, or an inorganic may be substituted for an organic, and this without hurting the plant. In some opiums, the meconic acid is thus replaced by the sulphuric. Liebig, to whom we owe these curious facts, has enumerated several other analogous substitutions.

A knowledge of the inorganic constituents of plants is, in many respects, of much importance, especially as indicating the cause of sterility of certain soils, in respect to particular crops, and leading to the selection of proper manures: thus, vines can only thrive in soils containing potash: wheat requires silicate of potash and phosphate of magnesia; wormwood, therefore, which takes up a large quantity of potash, would soon render a soil unfit for the growth of wheat, and of the vine, and hence a succession of wheat crops, by abstracting the silica and potash, and the phosphoric acid and magnesia, so far tends to impoverish the land, in respect to those substances, that unless they be added in the form of manure, or dressing, or otherwise, or replenished by fallowing, the crops must inevitably fail.

There is something very remarkable in the power of selecting and accumulating certain inorganic substances belonging to particular plants; of this, certain fuci exhibit a striking instance in respect to the accumulation of iodine and its salts.

You will observe, then, that there are certain inorganic compounds of the soil which are requisite as food for plants; others are to be regarded as mere supports, or as tending by their influence upon the texture rather than the composition of the soil, to fit it for its intended purposes: they are mechanical rather than chemical agents. Under this head, *alumina* requires particular notice, and is, in various ways, a most important constituent of perfect or fertile soils, though it scarcely ever appears to be, in any way, absorbed by the plants, and is consequently rarely found in the residue of their combustion. A certain quantity of alumina gives a firmness to the soil, and as, on the one hand, its excess is highly mischievous, in consequence of the plasticity which it produces, as seen in the purer clays, so on the other, its absence leaves the soil ill fitted for the mere mechanical support of the stem, and attachment of the roots; and then, its great retentive and absorbent power in regard to moisture, though mischievous in the pure clays, produces an excellent effect where they are duly tempered by the admixture of other earths. A peculiar absorbent power, too, in regard to ammonia, belongs to these aluminous mixtures, and as all common clays contain potash and soda, they acquire importance as sources of those alkalis: silica, alumina, alkalis, and oxide of iron, are the usual components of clays.

[Analytical tables of various clays were here referred to.]

Perfectly pure sand, or in other words, pure silica, cannot, in any way, contribute to the nourishment of plants, though it is highly useful as affecting the texture of the soil; the silica which is actually taken up, or absorbed by the plant, being probably, in all cases, derived from silicate of potash or soda, or some more complex source. A third ingredient of a fertile soil is carbonate of lime, and this, as furnished by the different limestones, is generally associated with more or less magnesia and phosphoric acid. It is to a due mixture of these mineral constituents of the soil that its fertility is to be attributed, no less than to the due addition of those substances of organic origin which we have formerly considered. The most propitious soils, as far as mere mineral contents are concerned, are those which result from disintegrated and decomposed lava: they contain silica, alumina, lime, potash, soda, and oxide of iron. There is a curious way in which it would appear that alkalis may sometimes enter the vegetable fabric, namely, in consequence of the exhalation or secretion of acetic acid by their roots: the acetates thus formed being absorbed: acetate of ammonia would probably, in this way, be eminently useful.

We can now, then, understand how it is that the continuance of one crop may render land unfruitful by robbing it of certain inorganic prin-

ciples—as, for instance, by abstracting its potash or silicate of potash, or phosphoric salts; in soils abounding in these substances, it is true that such crops may successfully succeed each other annually for a time, but ultimately they, in the greater number of instances, become exhausted and barren. Liebig tells us that the fertile districts in which the first Virginian colonists grew abundance of wheat and tobacco without manure or fallow, havo now become unfruitful and poor pastures, yielding neither corn nor tobacco, except under the usual influence of manure; he assumes, in reference to this question, that upwards of 100 lbs. of alkalies are removed annually by a wheat crop from each acre of land; no wonder, then, that exhaustion and barrenness are the consequence, until the abstracted substances are replaced either in the form of manure, or by ploughing up the land and suffering it to lie fallow, so that the alkaline substances evolved from their various compounds by the joint action of air and moisture may have time to accumulate; or that by the disturbance of the soil, fresh portions of it may be brought within reach of the absorptive fibres of the roots. All our land, Liebig remarks, is much in this condition; and that the loss or change of humus, upon which so much stress was formerly laid, is a comparatively insignificant item in the account, is proved, he says, by the excessive and durable fertility of the Neapolitan territory, which, without manure and with little humus, has been cropped for one thousand successive years, its happy chemical condition being such as to admit of the annual evolution of an adequate quantity of alkaline silicates, and other salts, by the action of air and moisture upon the decomposed lava of which its basis consists. In good common soils, one fallow year in three serves to replace most of the abstracted substances which, I have already stated, as regards wheat, are chiefly alkaline silicates and magnesian phosphates, and without these it will not thrive in the richest soil: it may grow, but not healthily, neither forming straw nor grain as it ought. Among trees, the oak and beech require a somewhat large supply of alkali, and accordingly we remark that they fail and dwindle, where the fir, which wants but little alkali, thrives. 1000 parts of dry oak leaves leave, when burned, 55 parts of ashes and 24 of soluble salts; 1000 of fir leaves only leave 20 parts of ash and between 4 and 5 of alkali. The ashes of 1000 parts of wheat amounts to 155 parts—of barley to 85—and of oats to 44; hence Liebig infers that a field may produce three crops of oats and two of barley to one only of wheat. It deserves remark, in respect to these inferences, that potash may sometimes be effectually replaced by soda, or even by lime or magnesia. Among the other substances which may be set free by the joint action of air, water, and heat, upon soils, and which are also abstracted by certain plants, we may enumerate common salt, nitre, chloride of potassium, and sulphate of potash. It will now be obvious why pease, beans, vetches, buck-wheat, and other plants requiring comparatively little of the silicates and phosphates of the alkaline bases, do not injure the land for corn crops coming immediately after them; and also, why two plants growing close together injure each other if their wants are the same, but not if their favourite foods differ. It is stated by Liebig that the quantity of phosphates abstracted from the soil by wheat and by tobacco are in the ratio of 98 to 16. Every fact relating to the agricultural physiology of wheat is obviously of the utmost importance, and the influence of the phosphates and silicates upon that crop is in this respect deserving of much attention; it is, in fact, evident that those crops will not always be most healthy and abundant which have been most plentifully supplied with what is commonly called *manure;* that they require other things besides carbonic acid and ammonia, and that, in this respect, an entirely new field of experiment and inquiry is open to the practical agriculturist.

There is another point in the history of the influence of the crop upon the soil, at which I have hinted, and which must not be overlooked, and upon which I wish I had more time to enlarge, for it is important and curious; I allude to the secreting as well as the imbibing powers of the fibrils of the root; it seems that certain substances which have been absorbed by this channel and found injurious or unnecessary to the plant, are again emitted and returned into the soil, and such soil would of course in this way be rendered hurtful to the same crop, though, perhaps, from the very same cause, fertile in respect to others. Such cases appear frequently to occur in respect to fruit trees; some, growing beside each other, promote,—others prevent each others development. Macaire Princep has shewn that resinous, extractive, and gummy substances are thus excreted from the roots of plants, and these, being in themselves unfit for nutriment, sterilize the soil, until by the aid of lime, or by fallowing, they are decomposed and resolved into other forms of matter.

Inasmuch as animals have no power of producing or generating new elements, every constituent of the animal must of necessity have been derived from plants; and the air, the soil, and manure, in administering to the wants of vegetables, must also, though indirectly, furnish those of the animal organs; and it seems not difficult to determine, in relation to this subject, what is derived from the air, what from the common soil, and what from manures. When animals putrefy, their carbon, hydrogen, oxygen, and nitrogen, pass away under a variety of new and complicated forms, ultimately perhaps resolvable into carbonic acid, water, and ammonia; and phosphate of lime, and certain soluble salts, and oxide of iron, remain. These then are the things which must be again restored through the medium of the atmosphere and the soil to plants; the necessity of ammoniacal and carbonaceous manures has long been known and admitted, and from them the carbon, hydrogen, oxygen, and nitrogen, of the vegetable, and consequently of the animal kingdom, are derived. We now understand the paramount necessity of silica, lime, magnesia, potash, soda, phosphoric acid, and other things, derived from bones, ashes, alkalis, salts, and so forth. It is in reference to these views that Liebig observes, "a time will come when fields will be manured with silicate of potash and phosphate of lime, and other substances prescribed by the chemist, just as the physician prescribes for disorders."

If, from the functions of plants, we pass to those of *animals*, we find that their influence upon the atmosphere is the direct reverse. That, in the language of Dumas, an animal is an apparatus of combustion, constantly evolving carbonic acid, and, therefore, constantly burning carbon,—he assumes that the temperature of animals is directly as the quantity of carbon converted into carbonic acid in a given time, and refers the low temperature of what are called *cold-blooded animals*, to their comparatively small consumption of carbon. All classes of animals tend to produce the same changes, whether the carbonic acid passes off by lungs, gills, or surface. It would also appear, inasmuch as a portion of oxygen beyond that required for the formation of carbonic acid, disappears during respiration, that a portion of hydrogen is also converted into water, or *burned*, in that process, at least in the higher orders of animals: and, further, that a portion of nitrogen is evolved, for, contrary to what might have been supposed, it would seem proved by very accurate experiments that animals never, under any circumstances, derive any portion of nitrogen directly from the atmosphere; that, in fact, we derive nothing which can be called *nourishment*, or tending to nourishment; nothing in any way *assimilable*, from the air: we only borrow from it the oxygen which burns our carbon and hydrogen, and which, therefore, we again return to it in the form of carbonic acid and water: the small portion of nitrogen given off from our blood, probably comes directly from our food, and the excess of nitrogen which in ages would, from this cause, ensue and accumulate in the atmosphere, is removed by *certain* plants, which are gifted with the power of absorbing it, and of which the sunflower furnishes an instance.*

Regarding, then, our *food* as the sole source of carbon, hydrogen, oxygen, and nitrogen, and having reference to the proximate principles or forms and combinations in which these ultimate elements are administered, to keep up the excretion of carbonic acid and ammonia,—it only remains to consider what are the changes it undergoes in the process of digestion, how it is assimilated, and in what way the renovation of parts on the one hand, and their removal on the other, is effected; for you are aware that the functions of animal life are connected with a continuous series of additions and abstractions, and that, although we retain our individuality, the materials of which our habitations are constructed are, so long as life lasts, suffering a constant series of repairs, and, under the mysterious influence of vitality, are exempt from ordinary laws—have, in fact, a distinct power of their own of resisting the attacks of the agents which are about us, and which resume their powers and display their energies as soon as we die.

Digestion, a function which puzzled the comprehension of Hunter, and has perplexed that of the most eminent physiologists, is, according to the latest chemical code, a process so simple that the veriest tyro in physiology might have unfolded all its apparent mystery, and admits of explanation in half a dozen sentences. Having assumed the fact that the *creation* of those forms of organic matter upon which we live, belongs exclusively to vegetables, and that animals have no power whatever of the kind, that *they* only appropriate and destroy—*assimilate* and *burn*, "il ne fallait plus chercher dans la digestion tous ces mysteres q'on etait bien sur de n'y point trouver," says Dumas. We are then told that digestion is simply a function of absorption. That the soluble matters of our food pass directly and with little

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* Only a very insignificant quantity of nitrogen thus passes off from the lungs; the great drain of the nitrogen of the system is through the kidneys, whence it passes in the form of *urea*, a substance of extraordinary composition and properties, for our accurate knowledge of the ultimate elements of which, we are indebted to Dr. Prout; its empyrical formula is C_2, H_4, O_2, N_2, it therefore consists of

	Atoms.		Equivalents.		Per cent.
Carbon	2	....	12	....	20.00
Hydrogen	4	....	4	....	6.67
Oxygen	2	....	16	....	26.66
Nitrogen	2	....	28	....	46.67
Urea	1	....	60	....	100.00

Urea is a nearly tasteless and very soluble crystallizable substance: it combines with some of the acids, especially the nitric and oxalic, with which it forms definite crystallized compounds. The aqueous solution of urea is not prone to change when pure; but the presence of certain organic matters, which act as *ferments*, tend to resolve it into carbonate of ammonia, for an atom of urea and two atoms of water contain the elements of two atoms of carbonate of ammonia; thus $C^2, H_4, O_2, N_2, + 2HO = 2(NH_3, + CO_2.)$ Now, the requisite ferment exists in the urine, by which this resolution is effected during what is called putrefaction; hence the high rank which urine holds as a manure, and as an occasional substitute for ammoniacal salts in some of the processes of arts. The supply of ammonia, and consequently of nitrogen to vegetables, and thence to animals, through the medium of the atmosphere, is probably almost solely referable to this extraordinary source; that is, the urea of the urine of all animals, passing away through various channels, must ultimately be resolved into carbonate of ammonia, the volatility and solubility of which enables it to be disposed of in the way pointed out in these lectures. Tho average amount of urea voided daily by the human subject, is about 1320 grains, and as it is largely contained in the urine of the graminivora, as well as of the carnivora, some notion may be formed of the immense quantity of nitrogen (which constitutes 45 per cent. of urea) thus rendered back from organic to inorganic nature, to be again elaborated. The history of the other contents of the urine, and the comparative analyses of the urine of different animals, were, of course, not gone into in these lectures.

change into the blood, and that the insoluble matters, reduced to an adequate state of comminution, are carried thither by the chyle, being absorbed by the orifices of the lacteals. The great end of digestion, therefore, appears to be, to restore to the blood the substances which it is continually losing, and amongst which the products of respiration are pre-eminent; for the quantity of carbon rendered by that process to the air amounts to as much as 11 oz. per day, which is nearly the equivalent of the quantity of carbon contained in our daily food. Now, as to the destination and changes of our food, it would appear probable that the amylaceous parts are saccharised, and in that state absorbed—fat and its associates pass directly into the vessels, and form stores which the blood draws upon when it wants them for combustion. The neutral *azotised* products such as albumen, fibrine, caseum, &c. are first dissolved, and then, again precipitated, pass into the chyle, either finely divided, or re-dissolved. Thus our food consists of three distinct and well-defined varieties.—1. The neutral azotised substances, which are ready formed in animals and plants, and which we take up nearly as they are.—2. Fats, which are in the same predicament.—3. Amylaceous matters and sugar, the same. For the *origin* of these proximate principles, we must go back to the vegetable world. They may be divided into *assimilable* products, such as fibrin, albumen, caseum, and fat, which serve to increase and renovate the organs of the body; and *non-assimilable*, such as starch, gum, sugar, and occasionally fat, which are consumed in respiration. The animal, therefore, either appropriates or destroys the ready-made products of organisation, and does *not* compose or form them. They are introduced by digestion into the blood, those which are azotised are assimilated, the others decomposed as it were by combustion.

[In reference to these subjects, Mr. Brande here also stated the results of the experiments of Bouchardat and Sandras, which he further explained by reference to a diagram, for which we have not space.]

All modern researches tend to shew that *animal heat* is the result of the chemical production of carbonic acid and water, that, in fact, it is the result of a species of combustion in which the oxygen is not gaseous, but dissolved in the blood; but the precise nature of these changes has been differently explained. Dumas observes, that venous blood dissolves oxygen, and becomes arterial in the lungs, without any evolution of heat; that under the influence of the absorbed oxygen, certain matters in the blood are converted into lactic acid, which becomes lactate of soda, and that this lactate of soda, by what he calls "*veritable combustion*," becomes *carbonate of soda*, and a new formation of lactate succeeds, and so on. This slow and continuous succession of phenomena identical with combustion, is the object of respiration. The oxygen is absorbed in the lungs, but the evolution of carbonic acid belongs to the whole capillary circulation,—it is there that the carbon is, so to say, burned, and the heat evolved.

In these phenomena, Liebig assigns an important place to the *colouring matter* of the blood. The red globules, he observes, contain a compound of iron, and no other constituent of the body contains iron: the power of absorbing oxygen belongs to these ferriferous globules, and as they take no apparent share in nutrition, it cannot be doubted that they perform a part in respiration: it is supposed that the iron globules in arterial blood are saturated with oxygen, which is lost in the capillaries,—that a *peroxide* thus passes into a *protoxide*, which, in venous blood, is combined with carbonic acid; that exposed to air in the lungs, the globules take up oxygen again, and the carbonic acid is displaced. Thus the globules are represented as performing the important function of carriers of oxygen from the lungs to the capillaries, and of carbonic acid from the capillaries to the lungs.

To these remarks we may add, that inasmuch as the oxygen taken *in* to the system goes *out* of it combined with carbon and hydrogen, which are to be replaced by *fresh* carbon and hydrogen, the nourishment required will be proportionate to the quantity of oxygen received; and that, consequently, the quantity of nourishment required, will vary with the force and number of respirations. Children, for instance, who breathe more rapidly than adults, require more food, and suffer more from hunger. A bird starves in three days—a serpent in six months. Exercise increases the number of respirations, and the desire for food, and excess of food is incompatible with deficient exercise, just as much exercise requires much food.

Further, we take in more oxygen and expire more carbon in winter than in summer, and with a high than a low barometer; and though equal *weights* of food may be taken in cold and warm climates, it is so dispensed as to contain unequal proportions of carbon. The foods of the natives of hot climates, consisting chiefly of fruits and grains, only contain, in their fresh state, about 12 per cent. of carbon, while the bacon, and train-oil, and tallow, which are the luxuries of the arctic regions, contain 65 to 80 per cent. In warm climates, moderation in eating is an easy matter: in cold climates we are always hungry; and after a good meal, we can brave a degree of cold and exertion which would kill us upon an empty stomach. It is thus that in cold climates we love labour, and that we court repose in hot. Under this view, too, our clothing obviously becomes, to a certain extent, an equivalent of food. But for the further speculations arising out of these matters, I must refer you to the works of Liebeg and Dumas,*

The summary, then, of our subject is this,—there is a continual interchange of elements between the inorganic and organic creation, the former being chiefly represented by the air, the latter by vegetables and animals. From the atmosphere matter is transferred to plants—from plants to animals—from animals to air. Green vegetables are the laboratory of organic chemistry; it is there that the most complex forms of organic matter are slowly but surely *compounded*; they receive the emanations of the sun, its chemical and heating rays, and thence derive their source of power. Animals assimilate, and absorb the materials which they are thus furnished with, and although in their tissues and vessels new products may be formed, they are always of a more simple character, and are approximations to the inorganic or elementary condition. Thus, then, *they* gradually undo that which plants had gradually done; *they* decompose that which plants had composed; they are the analysts—plants, the synthesists, and under their influence complicated forms are gradually simplified, and at length resolved into carbonic acid and water—into nitrogen and ammonia—into gases, dust, and ashes, which are restored to the parent air and earth. During these decompositions they evolve heat, which, radiating into the atmosphere, compensates that which vegetables had absorbed; in fine, that which the air lends to plants, plants lend to animals, and animals to the air. These opposite functions of the vegetable and animal world have been well and concisely contrasted by Dumas in the following table:—

VEGETABLES.

Produce	Azotised principles. Starch, sugar, oils, &c.
Decompose	Carbonic acid. Water. Ammonia.
Evolve	Oxygen.
Absorb	Heat.

Are an apparatus of *deoxydizement & stationary*.

ANIMALS.

Consume	Azotised principles. Starch, sugar, oils, &c.
Produce	Carbonic acid. Water. Ammonia.
Absorb	Oxygen.
Evolve	Heat.

Are an apparatus of *oxydizement & locomotive*.

* In these views of digestion, respiration, and evolution of animal heat, neither Dumas nor Liebeg seem to take account of those interferences of the nervous influence which the researches of Sir Benjamin Brodie and of Dr. Wilson Philip have so manifestly demonstrated.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

In connection with the subject of the last lecture, there is a variety of the disease I was then speaking of, which may be called atonic dyspnœa, arising from a defective irritability of the bronchial tubes; it may, in fact, be called a paralytic affection, and in this case expectoration is difficult. In some old cases of bronchitis you find dyspnœa occurring, with laboured expiration; the inspiration being comparatively easy and short, and the expiration lengthened and difficult. The treatment which I have found useful in these cases, is that employed in inflammations.

There is a spasmodic affection of the bronchial tubes, which I do not think it necessary to enter upon in any detailed manner here, because it is taken up under the head of diseases of children,—and that is hooping cough. It appears, however, that it is not exclusively a disease of infancy, and I think it desirable just to refer to it, as it requires some comparison with other affections. This disease has three stages, very distinctly exhibited in some instances, though less distinctly in others. It has a catarrhal stage, accompanied by symptoms very like those of common catarrhal bronchitis, with a hacking cough, and so forth; secondly, there is a nervous catarrhal stage in which, besides the catarrhal symptoms, there are peculiar nervous symptoms, with an excessive and violent, convulsive kind of cough; and thirdly, there is a state in which the catarrhal symptoms have ceased, and yet the nervous symptoms remain. Now, the first stage, in many instances, begins with a common cold, but it differs from it in this respect, that the irritation in the trachea is greater than usual. I can speak from not very remote experience on this point, having myself suffered from a second attack of hooping cough, during which I laboured under great headache, and general feverishness, with a most irritating cough. You observe in children that the cough is more teazing at its first commencement, and there is considerable fever, particularly in young subjects, and a great tendency to disturbance of the function of breathing, causing dyspnœa, congestion, and constitutional disorder. After a period, varying from four to eight days, the symptoms become very violent, the whole frame being shaken by the force of the paroxysms; these are repeated again and again with such violence that the circulation is impeded. There appears to be, in fact, under these circumstances, a predominance of the efforts of expiration over those of inspiration, the effect of which is to cause an obstruction in the passage of the blood through the lung. The continuance of the paroxysms makes the face turgid, there is a red, vivid turgescence, which shortly becomes of a darker colour, and, in fact, where these fits continue long, the face is almost purple or blackened. These paroxysms are much relieved by vomiting. Now, in this convulsive kind of cough, there is a hooping. In children the phænomenon of hooping depends on a constricted state of the glottis, continuing even during the act of violent and forcible inspiration; so that the forcible passage of the air through the contracted orifice causes sonorous vibrations, or, in other words, the hooping which attends the cough. The accompanying act of inspiration is prolonged in consequence of the air being expelled with great force from the chest, which thus becomes as empty as the respiratory muscles can well make it; it is also prolonged, partly from the aperture being so greatly contracted; and it is a long time before there is air enough taken in to fill the chest. The hooping phænomenon is chiefly confined to young subjects, but it does not always exist in them. It must be considered to be dependant on other causes than the convulsive character of the cough, such as the small size and the great irritability of the glottis. Now, in children, I stated one of the first causes of convulsions to be the contracted state of the glottis; on the other hand, in adults where the larynx is larger, and there is not excessive irritability, there is the convulsive cough without the hooping. On listening to the chest during the paroxysm, we

find a disproportion between the violence of the movements and the sound produced by the passage of the air into the chest; the same sort of thing as I described in spasmodic asthma. This is owing to the powers not being duly balanced, the expiratory process being carried to excess, whereas the inspiration is really very imperfect; so that the passage of the air to and fro in the chest is loud enough to be heard in distant parts of the house. Some signs of bronchitis are heard; such as the sibilant and sonorous rhonchi, and sometimes the mucous rhonchus. But it is the convulsive, straining cough, which constitutes the most marked symptom, and in children generally hooping is added. The impediment to the passage of the blood through the lung, which I have already adverted to, leads to various other symptoms; so that throughout the whole course of the disease various sequelæ may arise, on which its chief danger depends. Thus the congestion created not unfrequently renders the patient liable to an attack of epistaxis.

The symptoms are, first, convulsions; then coma, from pressure on the brain, sometimes even to a fatal degree; in many instances, children have died from the convulsions brought on by the cough, and sometimes these convulsive affections have led to continued and most serious disease. Hydrocephalus is a sequel arising out of hooping-cough, and no doubt the mechanical obstruction to the circulation induced by the coughing, tends considerably to the production of this disease. The lungs, too, become the seat of congestion or of violent pressure, from the blood accumulating in them, and this, in some subjects, goes on to inflammation. We find, therefore, many examples of congestion and of pneumonia, as usual concomitants of hooping-cough, where it is both febrile and convulsive in the early part of the second stage. There is a very peculiar form of pneumonia apt to occur in these cases, namely, lobular pneumonia, which I have found in children affected with hooping-cough: sometimes I have found vesicular pneumonia also. In other cases, again, chronic diseases are induced; and hydrocephalus, which I mentioned before, as one of the sequels, is of a chronic character. There is sometimes a development of tubercles owing to hooping-cough, and, at other times, various diseases of the abdomen, usually of a tuberculous character, ensue after this affection. The third stage is marked by a decline of all the symptoms of the catarrhal and the febrile stages; the fever ceases, and the expectoration is no longer viscid, or perhaps there is no expectoration at all; violent fits of coughing, however, occasionally come on, though the paroxysms are less frequent; but when they do come on, they are just as violent as before. The child in other respects is free from disease. He runs about, and eats food, but is perhaps suddenly attacked with one of these violent fits of coughing, when he lays hold of something for support, or sometimes tumbles down as in a fit, and food is thrown up from the stomach. At the end of each paroxysm, the child is a little exhausted for a time, but it may sit down and eat a hearty meal in the course of a few minutes afterwards. Sometimes the child may eat and vomit several times in succession. Now, there is a great variety in the duration and in the severity of this stage, more particularly. It may last from three or four to twelve weeks. Its prolongation renders the disease excessively troublesome and obstinate, and, in some cases, not devoid of danger.

The cause of this disease, so far as we know, depends on contagion; it is, however, like many other infectious diseases, epidemic—apt to occur at particular times. It often prevails at the same time as measles, and it is likewise one of those affections that generally occur but once in a life. There are, however, exceptions to this, and I have mentioned my own person as an instance. There are cases, more common than are generally supposed, of adults during the prevalence of this disease, having a convulsive kind of cough. Medical men do not allow this to be hooping-cough, because there is no hoop; but I say the convulsive character of the cough denotes it to be of the same nature; and where one child in a family is attacked with hooping-cough, the others are generally affected with a convulsive cough of the kind I have been describing; and I have no hesitation in attributing it to the same cause. The results of the *post mortem* examinations in these cases are not very satisfactory with regard to the affection itself; but it must be allowed that the disease is not in itself of a very fatal character, and only becomes so by its complications. In cases of death from hooping-cough, the mucous membrane of the glottis and larynx is found injected in a greater or less degree, as in some cases of bronchitis. In some, the œsophagus is injected, and in others not at all definitely or clearly. There is nothing satisfactory in the *post mortem* examination. The complications usually present are, engorgement and hepatization of the lungs, and all the phenomena of pneumonia, lobular and vesicular; and in the more prolonged affections, where the disease has been going on some time, there are often tuberculous deposits in the lungs, and in the bronchial membranes; sometimes the meninges of the brain become affected, and we have meningitis developed; at other times dilatation of the air cells takes place. Thus the inflammatory affection propagated by the disease, may induce pneumonia, pleuritis, pericarditis, and meningitis; besides various symptoms, accompanied with effusions of serum and of lymph upon these separate membranes. The intestinal canal is not unfrequently affected; the mucous membrane of the ilium is often inflamed, and there is enlargement of the mesenteric glands.

The pathology of this disease will not occupy us long. Some have referred it to the nervous system exclusively. Laennec, and other French writers, have asserted it to be a bronchial inflammation; but the real truth seems to be, that the disease is a spasmodic irritation, first, of an inflammatory character, somewhat like a common catarrhal inflammation; that, being of a spasmodic character, instead of affecting the superficial membrane only, it seizes on peculiar parts, affecting the nervous properties of the larynx, and of those parts associated with it. It may, therefore, be represented as consisting in a catarrhal affection, with a successive development of the excito-motor properties in connection with the function of respiration. Why spasmodic action is produced we cannot tell, and this is a point yet to be determined,

The prognosis is usually serious in proportion to the complications, and to the youth of the subject; we must also regard the weakness of the patient. Where complications exist, the disease is very troublesome and frequently continues for some time, thus giving to the disease a serious character. These diseases are very apt to be aggravated by a repetition of the cough, which cannot in all instances be at once prevented. Pneumonia becomes a most serious addition to hooping-cough on that account.

The treatment is to be guided by the stages and the complications of the disease. In the first period, when it is catarrhal inflammation, the treatment should be antiphlogistic merely: if there are no complications, antimonials and salines, with keeping the bowels open, are all that is necessary. When the second stage comes on, something must be done to counteract it, and when the disease is altogether nervous, then the treatment should be of an anti-spasmodic nature. In regard to the first stage, besides the antimonial treatment, if there be any inflammatory affection, we may use mercurials, and if this add to the nervous irritation, we must employ something to quiet the nervous system. Now, some medicines act peculiarly on the nerves. Remember, this nervous irritation consists in too violent an action, which is referable to the medulla oblongata; there is a violent contraction of the bronchial tubes, and it is remarkable how, in different cases, remedies act peculiarly on these different parts. Hydrocyanic acid is a very useful remedy in hooping-cough. It acts on the medulla oblongata, and suspends the respiratory action; it, therefore, requires much care in its administration, for if too much be given, the respiratory action will be altogether destroyed. If there is, likewise, excessive contraction of the bronchial tubes, constituting another element of the disease, we must use medicines which are found to relax the bronchial tubes in a great degree. Of these medicines, belladonna and stramonium are very efficacious in shortening the paroxysms of hooping-cough. Their peculiar effect seems to be in relaxing the bronchial fibres, and preventing their spasmodic contraction. They may be given in very considerable doses, beginning with a quarter of a grain, and gradually increasing it to half a grain, one grain, or even two grains, if it produce no serious effect. I have seen as much as two grains given in the case of a child about the age of two years, without any serious consequence resulting, but with the good effect of shortening the paroxysms. The dose may be given about three times a day; not more frequently, for fear of producing disorder of the system. Sometimes these remedies lose their effect, and opium may be necessary to be employed. In the second stage, blisters are often useful, even before the inflammatory symptoms have subsided: anodyne liniments are also found to be useful in these affections. The relief afforded to the patient is in proportion as the irritability is diminished, and the excito-motor function restored to its normal condition. Turpentine liniments are useful in preventing congestion on the surface. These things are to be continued so long as the convulsive affection lasts. In the third stage, in addition to the employment of anti-spasmodics, stramonium, belladonna, and so forth, advantage often arises from the use of metallic tonics, and even stimulants; accordingly, in the advanced stage of hooping-cough, when all inflammatory action has passed away, and there is no expectoration, bark, zinc, arsenic, iron, and their various preparations, are found to be useful. The use of these must often be guided by the features of the case. In the cachectic state, where the patient has been reduced by the prolongation of the disease, the best remedy is the sesqui-oxide of iron, in an ammoniated tincture of iodide of iron. These are highly useful in restoring blood to the system, and in diminishing the frequency of the paroxysms. The tincture of cantharides is useful, and alum has also been said to be beneficial; it may be so, for aught I know. The complications of this affection are to be treated according to their nature. Convulsive cough sometimes occurs in adults, independently of hooping-cough, and it affects particularly nervous or hysterical subjects, those in whom the excito-motor function is unusually developed; and in these subjects we find it is the excito-motor function connected with the respiration that is affected, constituting the violent paroxysms of cough;—in other instances, the excito-motor function connected with another set of organs, constituting violent vomiting. In many nervous subjects, chronic bronchial affections, and chronic catarrh in very old people, are often accompanied by a very convulsive kind of cough. Now, in these instances, great benefit is derived from the use of belladonna and hydrocyanic acid; also from assafœtida, and the application of blisters to the spine. These remedies sometimes act with signal success. A few doses of belladonna operate often, like a charm. Painful sensibility of the air-tubes sometimes exists in a remarkable degree, independent of inflammation; and many persons have a peculiar tendency to it, so that they cannot go out into the cold air or fog, without having extreme pain produced. These symptoms amount to a kind of neuralgia, and some persons are subject to gastralgia on exposure to the cold air. The treatment in these cases will be what I have recommended under the head of excessive sensibility. Narcotics, and temporary remedies of that kind, are useful. There are some other measures which are considered useful, such as the inhalation of the vapour of hot water; and smoking cigars is often resorted to as a useful remedy. Cloves, ginger, and cayenne, are often of great use. The respirator is useful in protecting the sensitive membrane against the cold. Nervous affections usually depend on some want of balance in the nervous system, and, therefore, relief is often to be obtained from the employment of general tonics.

Structural diseases and dilatation of the air-tubes generally result from inflammation. Thickening of the mucous and sub-mucous tissues is also generally the result of inflammatory action,

and may be relieved by freely exciting the secretions of the part. If this relief does not take place, the thickening may become permanent. In some cases, the mucous membrane is thickened, and the mucous follicles enlarged, and there is great tumefaction of the sub-mucous tissues. These tissues, by thickening, become less elastic and less tensible, and, therefore, damage to the respiratory apparatus is the result. In some cases, the large bronchi become thickened and hardened, and ossification frequently ensues—a state not at all unfrequently met with. The ect of this thickening and increased rigidity is render the whole body of the lung less expansible, both longitudinally and transversely. When the longitudinal fibres are more rigid, it is quite clear that they cannot expand in that direction, and the breathing of persons affected in this way is habitually short and laboured, especially in inspiration. On examining the chest of a person labouring under chronic bronchitis, the wheezing sound is heard; the vesicular murmur is impaired, as well as all the motions of the chest, and this state is permanent. This disease leads to emphysema, and where that lesion is actually produced, there is a prolonged effort in inspiration. We do not find this existing separately from emphysema. The treatment should be directed towards removing the remains of inflammation, as the danger of the disease depends chiefly on the continuance of the inflammatory action: accordingly, subjects who suffer from frequent or prolonged acute bronchitis, going on for a long time, become subject to this disease. An antiphlogistic treatment is the best means of removing its effects. Now, besides these remedies, I have mentioned iodide of potassium as a most valuable remedy. Some advantage, too, will arise in these cases from promoting the regularity of the circulation, not allowing the patient to remain in a state of too much torpidity; therefore, regular and moderate exercise in mild air, and horse-exercise, should be resorted to. Inhalation of vapour may be useful in promoting free secretion from the thickened membrane. The vapour of iodine may be useful here, beginning with a mild proportion, and gradually increasing it, as it is necessary to prevent irritation. On examining the lungs of those who have long laboured under disease of the chest, we find, in some cases, dilatation—and, in others, contraction, or obliteration of the air-tubes.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE II.

THEOREM THE NINTH.

The vesicle when organised and endowed with all its elements of vitality, inspires and expires gas, water, and the salts which natural water holds in solution.—Place in the rays of the sun, under a glass containing a mixture of atmospheric air and carbonic acid, some pieces of river-moss, in a little water, and you will shortly see the water rise in the tube; if you now analyse the gas, you will find a diminution of the carbonic acid and an increase of oxygen. From this we conclude that the river-weed (and all green vegetable tissues act in the same way under similar circumstances) absorbs the carbonic acid, assimilating to itself the carbon, and disengaging the oxygen. Increase the number of these plants, and you augment the activity of the absorption and of the elimination. Diminish the cause, and you diminish the effects. So that by reducing the plant to its microscopic element, to one of those simple cells which, by their adjunction, form its filament, we shall come to the same conclusion as that already expressed, viz., that the result of the general elaboration of the mass of these filaments, is but the sum of the products of its elements. The microscopic cell, then, respires gas.

Place beneath the microscope, in a small glass filled with water, a tube of *chara*, prepared in the manner I have explained in the *Systeme de Physiologie vegetale, &c.* This tube is in itself a simple gigantic cell, in which elaboration is carried on, together with an incessant circulation of the fluids which it contains, even when it has become isolated, in the most complete manner, from the tissues of the vegetable being to which it was attached. Now, we see that, as long as the water, in which this isolated organ lives, preserves its purity and its level, the circulation progresses with uninterrupted regularity. The least drop of a liquid incapable of assimilation, suddenly arrests the circulation; the organ dies: and that, although its walls are very dense, and do not appear to have been in the least altered by the action of the poison. The wall then absorbs, and transmits instantaneously to the interior the product of this absorption. But if the level of the water become lowered, and the tube be almost in direct communication with the external air, we see the circulation grow slacker, and it continues in this state until the surrounding water is almost entirely evaporated. From this moment the circulation falters, it oscillates, and eventually ceases altogether. The tube then quickly collapses, its superior half becoming agglutinated to the inferior, without the least solution of continuity taking place in its structure. An exhalation of the liquid is thus produced through the walls of the cell. But if, at the moment when the liquid commences to falter, we again cover this tube with fresh water, we shall see the circulation suddenly reassume its course, with all its former energy; thus affording a counterproof of what we have just been saying as to its faculty of absorption. The vegetable cell, then, absorbs gas and liquids, and exhales them in its turn. We shall be enabled to demonstrate the same fact, in regard to the animal cell, in a manner almost as direct and as accessible to the sight. I have, I think, established, 1st. That the phenomenon of inspiration, as shewn by the microscope, takes place by a visible movement of attraction, which causes the corpuscles, floating on the surface of the water, to pass in a direct and parallel line towards the respiring surface.—2d. That that of expiration, a phenomenon dependant on the former, and which is a necessary consequence of it, is performed by the shining and luminous streaks, which microscopists have almost invariably taken for vibratile ciliæ, for small hairs in a constant state of agitation. This double phenomenon is plainly observable in the respiratory and uterine organs of the mollusca; for instance, in the muscle, &c. (*unio et anodonta.*) Now, in these species of animals which are much more tenacious of life than others, inasmuch as their organs, being less complicated, enable them to remain constantly under water, a medium which is a much better preserver of life than the atmosphere,—in these species I say, we may readily ascertain that this faculty of inspiration and expiration is inherent to each cell (even the smallest, provided it be in a state of integrity) which enters into the composition of the respiratory tissue. Each portion, in fact, which we may detach from it, moves about in the water, inspires the corpuscles suspended in the liquid by attracting them to itself, and expires through the ciliæ, which seem to move with the rapidity of lightning. Each portion has become a complete individual, endowed with life and motion for a definite space of time. Every cell in an organ is then possessed of the same function as the general organ; and every cell, to whatever kind of organ it may belong, is endowed with the faculty of inspiring and expiring gas, or liquids impregnated with gas.

THEOREM THE TENTH.

The cell susceptible of development respires gas, to elaborate it into liquids; and liquids and salts, to elaborate them into tissues.—It has been demonstrated, by experiments upon the constitution of the atmosphere, that every plant absorbs carbonic acid, under the influence of light, and at the same time sets oxygen free. It appropriates the carbon of the carbonic acid. During the night, however, a totally different result takes place; the herbaceous tissue absorbs oxygen, and disengages nitrogen and carbonic acid. The result of this condition, if real, would be to establish, between diurnal inspiration and nocturnal expiration, so perfect a balance, that after the incessant exercise of the respiratory organ, there would remain nothing, in the organs, for the development of new tissues. Now, this is not at all conformable to the ideas which we have of the sagacity of the natural laws. We must then seek an explanation for this anomaly. We may distinguish in every vegetable, two systems which elaborate in two different ways; the one which elaborates in the light, and the other which elaborates in the dark. Every organ combines together these two systems, by its two surfaces, the one superior and the other inferior; but the vegetables of an order which we consider more elevated, by reason of the complication of their structure, possess these two systems in a very marked manner by their roots, which vegetate only in the shade of the earth, and by their branches, which vegetate only in the air. It is evident that, since the leaves can vegetate only in the light, they sleep during the night. The roots, on the contrary, which are incessantly placed in the conditions necessary to their subterraneous development, must elaborate without the least intermission. But there exists, between the aerial and the subterraneous systems, an uninterrupted exchange of products, through the vehicle of the circulation which is common to them. Admitting then that the roots absorb carbonic acid as well as the leaves; they absorb it during the night as well as the day, and, during night as well as day, they transmit to the aerial system a circulation impregnated with this gas. In the light, the leaves eliminate the oxygen of this gas, and expire it, after having appropriated its carbon. But in the night, their elaboration being suspended, they must necessarily expire, in the state in which they have received it, the carbonic acid which the afflux of the circulation accumulates in their respiratory organs. The carbonic acid which they disengage in the night is then merely the carbonic acid which is transmitted to them by the roots, and which, in the absence of the light, their aerial system is no longer capable of elaborating.

With respect to animals, the principal circumstances of their respiration have mostly been appreciated from time immemorial. It has always been known that man requires pure air, for the purpose of respiration, and that he deteriorates, by the product of his respiration, the air which surrounds him. But it is lately only, and since the discovery of pneumatic chemistry, that it has been attempted to analyse this phenomenon in a rigorous manner; and the most indisputable result which has been attained, is that the animal respiration vitiates the air, by absorbing the oxygen, and leaving in its place carbonic acid; so that the surrounding air becomes definitively composed of nitrogen and carbonic acid only. Still there is another organ besides the lung, which must necessarily absorb gases in a certain degree; I mean the stomach, whether it be simple, as in man, or multiple, as in the ruminantia. In fact, I have shewn, in my *Systeme de Chimie Organique*, that the digestion in the stomach is in the first place a saccharine and alcoholic fermentation, subsequently becoming acetic; the products of which are on the one hand chyme, which, being transformed into chyle, furnishes the liquid materials of the blood, and on the other a disengagement of carbonic acid, which must be re-absorbed by the walls of the stomach, since, in the normal state, no eructation takes place. In the ruminantia, this disengagement of carbonic acid gas in the stomach sometimes takes place in such great abundance, that, not being absorbed by the walls of the stomach, nor escaping outwards, it constitutes in many cases the disease known by the name of *meteorisation.** With regard to the skin, it is evident that it absorbs air in its turn, in an especial manner; for, if we cover it over with a coating of gum, a coating which the skin cannot absorb (in the way it absorbs fatty matters) and which, consequently, hermetically intercepts the contact of air, the animal suffers, becomes asphyxiated, so to speak, through the medium of the skin, and is only cured from this artificial disease by the coating being washed off as quickly as possible. On the other

* In this point of view the stomach fulfils the functions of the diurnal organ of plants, and the lung those of their nocturnal organ.

hand, it is indisputable that the animal tissues absorb liquids, that is to say, water more or less saturated with salts or substances capable of contributing to organisation. Every day experience demonstrates this fact. Let us now pass from the domain of physiological researches to that of chemistry and analyse these different phenomena. The wall of the ligneous cell, as well as that of the least complicated cell of the animal cellular tissue, is resolved by elementary analysis into oxygen and hydrogen, representing the proportions of water, and into carbon, more or less in excess; andleaves a certain quantity of ashes, which are principally composed of potash and lime. The most lengthened washing, even in acidulated water, does not succeed in depriving the organic element of this inorganic matter, which is eliminated by incineration. These ashes were then combined with the substance of the organised tissue; they formed one of the elements of its organisation. Analysis also demonstrates that these two elements vary in proportions, according to the age of the organ; and in nature, according to the nature, and consequently the kind of elaboration of an organ. The older the organ grows, the more does the inorganic element increase; the younger it is, the more does the liquid organic element prevail in its proportions. The most compact bone, the richest in carbonate and phosphate of lime, has commenced by being a cartilaginous substance; this by being a pulpy substance; and the latter, by being a simple liquid, in which the salts are proportionally less abundant, as its formation is more recent. The liquid then becomes organised, it becomes formed into vesicles, by the combination of the earthy bases with the organic element; the wall of the cell is in fine a combination, in which the earthy element plays the part of the base, and the organic element that of the acid.

We may here refer to what has been already established in the eighth theorem; namely, that every vesicle is developed in the interior and upon the wall of a maternal vesicle, which, as we have seen, absorbs gas and liquids; and, evidently, we must admit that the development of the secondary vesicle takes place in consequence of an elaboration of the gases and liquids absorbed, in consequence of an intimate combination, one with another, of the products of the gaseous and of the liquid inspiration. For the organised cell absorbs water charged with salts, carbonic acid gas, oxygen, hydrogen, and atmospheric air; and is in itself, as well as its products, but the result of the association of two elements:—1. Organic=water (oxygen and hydrogen) and carbon.—2. Inorganic =lime, potass, soda, iron, &c., or ammonia (nitrogen and hydrogen). The organised cell is then merely a mould in which to combine the materials of the earth and of the air. Ascertain the law of association of water and of carbon with the earthy bases, and you will have found the law of organised life, the laboratory of the organisation. Then seek the laws which preside over the various combinations of those elements susceptible of entering into the composition of an organised cell, and you will have at once produced the various results of animal or vegetable elaboration; you will be enabled to create at will the cell which elaborates the gum, that which, under the same circumstances, elaborates albumen, those which elaborate the chyme, the bile, the chyle, the blood, and, lastly, that which, under abnormal conditions, elaborates pus. A little more or a little less of water and of carbon, of oxygen or of hydrogen, a little more or a little less of earthy salts or of earthy bases, varying upon an indefinite scale,—such is organised life; such its variety and infinity, its power and its principle.

THEOREM THE ELEVENTH.

Organic Development can take place but in a certain Temperature, which has its variable limits, according to the Species and even the Individuals.—Extreme cold freezes the organising liquids and renders the organs rigid and inert; inspiration and expiration, circulation and secretion, all are suspended and paralysed. Life has departed, and the form alone is preserved entire, as long as this condition is maintained. Cold, being destructive of development and of fermentation, must necessarily maintain the organs in the state in which it finds them, and that for an indefinite period. The antediluvian mammoths are preserved intact beneath the polar ice; they are decomposed only when their millenary tomb, borne towards more genial climates, dissolves beneath the rays of a stronger sun, which raises up decomposition within their frames. Extreme heat reduces the cell, the organ, or the individual, at first into an elastic fluid, then into ashes. Cold concretes, fire disorganises. On either side of a certain temperature, death by inertia, or death by decomposition, takes place. In either case, nothing is lost, nothing is annihilated, to nature; the matter is but changed and modified in condition; a transformation takes place. The carbon, the hydrogen, and the oxygen, which, under the influence of a favourable temperature, were combined in an elaborating vesicle, capable of reproducing its type by their progressive association with the earthy or azotised salts, combine into water, carbonic acid, oxide of carbon, carburetted hydrogen, &c., when the heat surpasses the limits of organisation. Heat enters as a fourth element into vesicular organisation; in order that the molecule become organised (which is its proper form of crystallization) it is necessary that the atom of carbon, of hydrogen, and of oxygen, be surrounded by a layer of caloric favourable to the maintenance of this association; if there be a subtraction of caloric, the organic molecule becomes crystallized like water; if an addition, the molecule tends to become evaporated, to be converted into a gaseous form, and to combine its gases in the nascent state, like all liquids which have water for their vehicle.

Organisation is, then, a form of crystallization which the ternary combination of carbon, hydrogen, and oxygen assume, at a certain temperature, by associating themselves with bases and with salts; the distinct property of this vesicular crystallization is its indefinite development, while placed in the same favourable circumstances. This development will be proportionally slow, as the temperature approaches its *lowest* limit; while it will, consequently, be so much the more energetic, as the temperature shall be carried towards the *maximum* which is consistent with vitality. It thus results that the species will be modified *ad infinitum*, according to the medium in which it may chance to live. The cells becoming developed upon a larger or smaller scale, according to the degree of temperature in which they may be placed, it follows that the form and the nature of the products will vary within the same limits; now, the difference of form and of products constitutes the entire difference of species.

We may readily imagine that our artificial means may greatly modify the medium in which we live, and supply even that which is wanting. We need merely refer to the effects of artificial heat and clothing.

Corollary.—Combine this theorem with the seventh; bear in mind the influence which the spire exercises in the phenomenon of development, and you will have an element which will account for individual differences,—differences which may be transmitted throughout a series of generations. Climate will explain the diversity of races; and the influence of domesticity and of surrounding circumstances will account for families and individuals.

THEOREM THE TWELFTH.

The faculty of inspiration, inherent to the organisation of the elementary cell, is the mechanical cause by means of which are produced, both the natural union of the cells, one with another, so as to form the cellular tissue, and that artificial union of the organs which takes the name of animal or vegetable graft.—Two cells, equally endowed with the faculty of inspiration of the surrounding gases and liquids, must necessarily become intimately combined together, as soon as the quantity of gas and of liquid which separates them shall have been absorbed by their inspiration; for, from the moment that there is no more gas nor liquid, there must be a vacuum: now, a vacuum is impossible, physically speaking, between two elastic tissues. The pressure exercised by the surrounding gases and liquids necessarily forces them into contact. This axiom is too well known, in physics, to require any further demonstration on our part. The contiguous cells, which are no longer able to inspire gases or liquids, must of necessity be attracted towards each other, and become intimately united. Now, we have said that the most complicated organ is an aggregate or compound of cells of a more and more elementary nature; the whole must, then, under this view, resemble each of its parts. Suppose, in fact, an organ which has undergone a more or less extensive solution of continuity. If you bring these divided surfaces into contact, all the cells, which the knife has not injured, will preserve their faculty of inspiration, and will, as it were, inspire themselves, and become united by their contiguous surfaces. Those which may have been disorganized will become obliterated, and will be resolved into gas or into liquids, which the artificial circulation will cast outwards. The portions of the organ thus mechanically brought together will become organically grafted on each other, and from two distinct parts a new whole will be formed. Such is what takes place whenever the two surfaces are composed of cells endowed with the same kind of aspiration—that is to say, possessing the same elaboration; and the compound organ will subsequently return to its elaborating functions, as if it had never lost its primitive simplicity; for it will be, after as before the operation, composed of elementary, but perfect cells, endowed with their proper state of vitality.

THE TOUCHER.—Local examination usually affords us much positive and direct information with regard to the seat and character of the existing disease, by informing us of all those changes that have taken place in the vagina and uterus, which can be recognised by the touch or sight. By it we are thus often enabled to detect the different morbid conditions of the cervix, whether congestive, inflammatory, or more strictly organic. We can generally distinguish by the same means these states from each other, and discriminate between the equally enlarged and dark-coloured congestion of the cervix, and the different forms of inflammation to which its structures are liable, whether that inflammation has assumed the granular, ulcerative, aphthous, or pustular type,—betweeen simple, syphilitic, corroding, and carcinomatous ulcers of the part; between granular enlargements, cauliflower excrescence, and cancerous degeneration of the cervix—between the vaginal tumours formed by the presence of a simply hypertrophied cervix, or of a true polypus; and between the general diffused enlargements of the organ produced by hypertrophy of its walls, or distension of its walls, or distension of its cavity, and that irregular, roundish, knobbed form which it almost invariably assumes in cases of fibrous tumours, and in such cases only.

ELECTRIC CURRENT OF MUSCLES.—M. Matteucci concludes, from a series of experiments, that the intensity of the electric current of muscles varies in cold-blooded animals, in proportion to the temperature in which they have lived for a certain time; that the duration of this current after death is short according as the animal is more elevated in the scale of beings; the intensity of the muscular current varies with the degree of nutrition of the muscle, and it is always higher in congested, or inflamed muscles. It is altogether independant of the integrity and activity of the motor and sensorial nervous system; and finally, the influence of narcotic poisons on the current, is either null or very slight. Among the gaseous poisons, sulphuretted hydrogen only acts in diminishing its intensity in a remarkable manner. The direction of the muscular current is always the same in every case.

THE MEDICAL TIMES.

SATURDAY, JULY 1, 1843.

Furiosus solo furore punitur.
LEGAL MAXIM.

FROM the numerous conversations recently held in the House of Lords, on the question of insanity, and from the formal explication of the law of the land on that subject, recently solicited and obtained by that assembly from the fifteen judges, we cannot doubt that we are likely, ere long, to have some legislative attempt to define precisely the different phases of mental alienation which the law will take cognizance of, and the variety of punishments which should be awarded. That the present state of our jurisprudence, in reference to insanity, is on any thing but a respectable footing no one now attempts to deny. Built up under the comparatively trifling knowledge on the subject of former days, our law has been forced in modern times to be at variance with itself—to be one thing on the statute-book, and another in its administration. The trial of M'Naughten, indeed—which especially drew men's minds to the consideration of the subject—demonstrated that among the highest speaking authorities there existed, as well in theory as in practice, the greatest differences of opinion as to what the law actually is. What was law according to Lord Chief Justice Tindal and Lord Lyndhurst, was anything but law according to Lords Brougham and Campbell. In this state of dubitation and incertitude on so important a subject, we owe some thanks to the suggestion which placed the matter before the judges of the land for their deliberate consideration. Legislation, in this case, must have become deeply imbued with its subject, become indeed insane as those it was made for, if the judges themselves could not come to some agreement as to what were its provisions in reference to one of the most important branches of its criminal jurisprudence. The expectation of unity has not, however, been realized, and the opinion of the majority is any thing but what we can be pleased with. While on one point of legal practice they could give no answer at all, fourteen, in direct opposition to one, have decided that the state of the law, in connection with the great question of the accountability of the insane, is, as we shall shortly present it, a state which, on examination, leaves—we consider—the necessity of Parliamentary interference as urgent as ever.

The first question submitted to the judges was:—

What is the law respecting alleged crimes committed by persons afflicted with insane delusion in respect of one or more particular subjects or persons; as, for instance, where at the time of the commission of the alleged crime, the accused knew he was acting contrary to law, but did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury, or of producing some supposed public benefit?

This question is carefully worded, and is supposed to meet exactly—as it was evidently designed—the case of M'Naughten. The answer (delivered too by Chief Justice Tindal!) is as follows:—

With respect to this question the opinion of the Judges was, that notwithstanding the party committing a wrong act when labouring under the idea of redressing a supposed grievance or injury, or under the impression of obtaining some public or private benefit, he was liable to punishment.

Now, it is to be observed that the only circumstance in this hypothesis which abates from the complete insanity of the agent, is a knowledge that his impugned act is against the law. He may, for example, be impressed with the delusion that he is a deity, and that this or that public personage, or a near and dear relative, is the only obstacle to attaining the full enjoyment of his imaginary rights. He may acquire for his supposed enemy an ungovernable hate, shewing itself in *public* as much as in *private* exhibitions of passion and rage,—he may publicly procure arms—may encounter his supposed foe in a public thoroughfare, where there is every chance of interference with his design, and certainty of his own apprehension if the design be carried out: in open day he may murder his best friend—give himself up to what appears certain death—adding a kind of suicide to his murder: yet, because he is not ignorant that his act is against the law, the deed is considered that of a being in full possession of his senses! He is, the judges tell us, *punishable*—that punishment being, by the law, a sanguinary execution!

Now, to us, it appears that the knowledge of his act being against law, so far from increasing his guilt (if there be any) establishes its diminution. It proves a greater amount of mental alienation, for it implies a mind not under the regulation of the ordinary rules of prudence and common sense. By it the homicide exhibits himself as uncontrolled by the strongest principle in the reasoning man's nature—self-preservation. For an object which is really worth nothing to him—and which derives all its importance from an imagination essentially deranged—he knowingly and deliberately sacrifices that boon to which the sane man instinctively clings the most tenaciously. Yet our law, according to the fourteen judges, affirms that this stronger proof of ungovernable madness, if absent, shall take the lunatic to the asylum—if present, shall hasten him to the scaffold!

But were we even willing to allow that this knowledge of a prohibitory and punishing law implied increased responsibility, we must yet dissent from the opinion implied by the judges, that the homicide should be punished, *as if sane*. If total insanity, according to their opinion, absolve totally from responsibility, partial insanity should absolve partially. The judges admit—and the question supposes—the man to be acting under insane delusion: if he is to be *debited* with his reasoning faculty on the state of the law, why shall he not be *credited* with his want of it, in reference to what is infinitely of more consequence than his correct perception as to one collateral circumstance of the catastrophe—we mean, the mad, overpowering, impelling instinct and impulse or, as the House of Lords calls it, "the insane delusion." The judges, taking their own principle of reasoning to be right, are yet wrong, unless one sane, and that an unimportant, circumstance, shall, in all cases of madmen's homicides, make the perpetrator a fit subject for the gallows.

The second question and its answer require no comment. We give them as they are published:—

Second question—"What are the proper questions to be submitted to the jury, when a person alleged to be afflicted with insane delusion respected one or more particular subjects or persons is charged with the commission of a crime, murder for example, and insanity is set up as a defence?"

The Judges, in answer to this question, wished to state that they were of opinion the jury ought in all cases to be told, that every man should be considered of sane mind, unless it was clearly proved in evidence to the contrary. That before a plea of insanity should be allowed, undoubted evidence ought to be adduced that the accused was of diseased mind, and that at the time he committed the act he was not conscious of right or wrong. This opixion related to every case in which a party was charged with an illegal act, and a plea of insanity was set up. Every person was supposed to know what the law was, and therefore nothing could justify a wrong act, except it was clearly proved the party did not know right from wrong. If that was not satisfactorily proved, the accused was liable to punishment, and it was the duty of the Judges so to tell the jury when summing up the evidence, accompanied with those remarks and observations as the nature and peculiarities of each case might suggest and require.

The third question was:—

"In what terms ought the question to be left to the jury, as to the prisoner's state of mind at the time when the act was committed?"

We are told that the judges gave no opinion on this question: the reason appears to be, that they had partially explained their opinion in the answer to the preceding question.

The fourth question was:—

"If a person under an insane delusion, as to existing facts, commits an offence in consequence thereof, is he thereby excused?"

The answer to this question was, the Judges were unanimous in opinion, that if the delusion was only partial, that the party accused was equally liable with a person of sane mind. If the accused killed another in self-defence, he would be entitled to an acquittal: but if committed for any supposed injury, he would then be liable to the punisement awarded by the laws to his crime.

Let us hope that the judges have not received justice from the reporters. We are supported in this opinion by the incredibility of Sir N. Tindal acknowledging opinions so opposed to his practice at the trial of M'Naughten. The question proposed is identically that given as Question I. with the omission of the clause regarding knowledge that the sanction of the law is against the designed act. If partial insanity will not exempt a prisoner from responsibility for the acts immediately originating, on what grounds can it be contended that the madman shall be ever exempt? Above all, on what grounds consistently with this opinion, could the

judge direct the jury summarily to acquit M'Naughten?

With all the deference to our law makers and law administrators which they merit, let us inform them that monomania is any thing but an uncommon or unknown form of madness; and that insanity, with respect to the subjects of the monomania, is just as complete and total as that of the utter madman in his worst paroxysms of phrenzy. The experience of every medical man who has made insanity an attentive study, proves that there are men who, without mental delusion, and free of hallucination, who with intellectual powers and bodily health, apparently unimpaired, exhibit a morbid perversion of the moral feelings and propensities, and an invincible instinct, which hurries them into moral wrong, despite the warnings of prudence, the teachings of conscience, the wrestlings of the understanding, or the strugglings of the will. Numerous cases are recorded, one of which, of exceeding interest, will be found in No. 154 of our work, in which persons subject to this dreadful malady have committed murders the most frightful on their wives, children, or dearest relatives, assigning, when charged with their crime, no other motive but that they could not help it. There was in them a fatalism induced by a diseased brain, the intellectual, but not the moral faculties, of which were left untouched. To send such men as these to the scaffold is not to serve, but to insult, justice; but when, in a man labouring under this *moral* insanity, we find added that derangement of the intellectual faculties which makes the most absurd fantasies appear as sober realities of vital consequence, we are presented with an unfortunate wretch, to whom the law can do nothing justly, but support out of the reach of mischief:—to such a being crime would be an incident, natural as the use of his limbs, almost as much a want of his abnormal nature as food, and his punishment for crime would not be the law's vindication, but the monument of its improvidence: instead of a debt it would be an insult to justice, and an outrage on the common sense and humanity of our species.

The last question is one of strictly medico-legal import. To such of our readers who may be summoned as witnesses it will not be without its interest.

With regard to the last question—

"Can a medical man, conversant with the disease of insanity, who never saw the prisoner previously to the trial, but who was present during the whole trial and the examination of all the witnesses, be asked his opinion as to the state of the prisoner's mind at the time of the commission of the alleged crime, or his opinion whether the prisoner was conscious at the time of doing the act that he was acting contrary to law? or whether he was labouring under any, and what, delusion at the time?"

The Judges were of opinion that the question could not be put to the witness in the precise form stated above, for by doing so they would be assuming that the facts had been proved. That was a question which ought to go to the jury exclusively. When the facts were proved and admitted, then the question, as one of science, could be generally put to a witness under the circumstances stated in the interrogatory.

MEMOIR OF DON JOSE CELESTINO MUTIS.

Translated from the French of the Baron de Humboldt, by Colonel R. WRIGHT, late Governor of the Province of Loxa, Consul General for the Republic of the Equator.

Don Jose Celestino Mutis, director of the *Botanical Expedition* of the kingdom of New Granada,* and astronomer royal at Santa Fé de Bogota, was born in Cadiz in 1732, of a family in easy circumstances. He is best known in Europe through his vast knowledge and researches in Botany. Linnæus terms him, "*phytologorum Americanorum princeps;*" but the services he has rendered to all the branches of natural history,—the discovery of the *quinquinas* in regions where their existence was unknown, the beneficent influence which he has exercised upon the civilisation and enlightenment of the Spanish colonies, assign to him a distinguished station amongst the men who have illustrated the new world.

After having applied himself with uncommon ardour to the study of mathematics, Mutis was forced by his parents to direct his attention to practical medicine, and pursued his courses at the college of San Fernando de Cadiz; he took his degrees at Sevilla, and, in 1757, was named substitute of a chair of anatomy at Madrid. During a sojourn of three years in the Spanish capital, he took more delight in botanical excursions than in visiting the hospitals, and he had the rare good fortune of acquiring the acquaintance of the celebrated naturalist of Upsal, who was desirous of adding to his herbal collection the plants of the Peninsula. This correspondence of Mutis with Linnæus became of still greater importance to science, inasmuch as the viceroy, Don Pedro Mexia de la Cerda engaged the former to accompany him to America in the quality of physician, 1750. Our young botanist had been named by the ministry amongst the persons selected to terminate their studies at Paris, Leyden and Bologna, but he did not hesitate a moment in sacrificing the prospect of visiting the most renowned universities of Europe, to the advantages and attractions of a distant expedition.

On his arrival at New Granada, he was vividly struck with the natural richness of a country where different climates are encountered in progressive succession, one above another, with the regularity of a flight of stairs. After remaining for a long period in Carthagena, Turbaco, and Honda, (chief port of the river Magdelena), Mutis accompanied the viceroy on his journey to Bogota, situate on the table land † 1365 toises above the level of the sea, and possessing a temperature similar to that of Bordeaux. Between Honda and Bogota he passed through forests containing precious species of the cinchona (*quinquina*), but until the year 1772, he had not given his attention to this useful production.

Named Professor of Mathematics in the "*Colegio Mayor de nuestra Senora del Rosario,*" he circulated at Sante Fé de Bogota, the first notions of the true planetary system. The Dominican Friars did not behold without inquietude that "*the Heresies of Copernicus,*" already professed by Bouguer, Godin, and La Condamine at Quito, should penetrate into New Granada; but the viceroy protected Mutis against the monks, who would have the earth remain immoveable; they, however, slowly accustomed themselves to what they yet call the "hypotheses of the new philosophy."

Mutis, anxious to examine the plants of the warm region, and to visit the argentiferous mines of New Granada, quitted the table land of Bogota. He made a long stay, first at La Montuosa, between Giron and Pamplona, and subsequently (from 1777 to 1782) at Real del Zapo, and Mariquita, situate at the foot of the Quindio Andes and Paramo of Herveo. It was at La Montuosa that he commenced the "*Grand Flore de la Nouvelle Grenade,*" a botanical work at which he laboured without intermission for the space of forty years, and which we have reason to fear, never will be published in a complete form. Linnæus, in his supplement of *Species Plantarum,* and in his Mantissa, has named a great number of rare species which Mutis remitted him from La Montuosa, but by a strange, and for the geography of plants, most unfortunate error, he has noted them as coming from Mexico.

The trifling sums which our traveller earned by the practice of his art, sometimes at the mines, he expended in the formation of a botanic library, in the purchase of barometers, geodætical instruments, and glasses to observe the occultations of Jupiter's satellites. He engaged artists to draw the most curious plants, and who painted in oil the indigenous animals almost all as large as life. The author of this article has seen a part of this collection, formed before Mutis had become the object of his sovereign's munificence. It was also during his sojourn at Real del Zapo (1786), that he made the important discovery of a quicksilver mine near Ibague Viejo, between the Nevada de Tolima and the river Saldano. So much useful exertion met at length with honourable encouragement. The court of Madrid, at the instance of the viceroy, Archbishop Don Antonio Caballero y Gongora, resolved (1782) upon founding, first at Mariquita, and afterwards (1790) at Santa Fé de Bogota, a grand establishment of natural history, under the name of "Expedicion Real Botanica," at the head of which was placed Don Celestino Mutis. An immense edifice of the capital was destined for this establishment. He included the herbaria, school of design, and library, one of the richest and most beautiful ever consecrated to such a purpose even in Europe, in one sole branch of natural history. Mutis had embraced the ecclesiastical state since the year 1772, and was named canon of the metropolitan church of Santa Fé and Confessor to a convent of nuns. Zealous in the discharge of the duties he had imposed upon himself, he found no leisure to extend his excursions beyond the vicinity of the capital, but he despatched the artists attached to the "Expedicion," to the warm and temperate regions which surround the table land of Bogota. Some Spanish artists, whose talents had been perfected by the councils of Mutis, formed, in a very few years, a school of young painters. The Indians, coloured, and indigenous natives of mixed blood, shewed an extraordinary disposition to imitate the form and colour of the plants. The drawings of the *Flore de Bogota* were executed on the largest sized paper; they chose the branches which were most laden with flowers; the analysis or anatomy of the fructified parts was subjoined at the foot of the drawing—generally, each plant was represented on three or four large sheets in colours and in black at the same time. The colours were extracted partly from indigenous colouring matter unknown in Europe. Never was a collection of drawings executed with greater splendour, nor, it may be said, on a larger scale. Mutis had taken for his model the most admired botanical works of his time, those of Jacquin, of L'Heritier, and the Abbé Cavanilles. The aspect of the vegetation and physiognomy of the plants, were pourtrayed with astonishing fidelity. Modern botanists who study the affinity of vegetables according to the insertion and adherence of the organs,

* Now the republic.

† Of the Andes.

would have wished for a more detailed analysis of the fruit and seed. When MM. de Humboldt and Bonpland were at Bogota in 1801, and enjoyed the noble hospitality of Mutis, the latter estimated the number of drawings already finished at 2000, amongst which 43 species of the *passiflora* and 123 species of *orchideous* plants, deserved particular admiration. Those travellers were the more surprised at the richness of Mutis's botanic collections (formed by himself and his estimable pupils MM. Valenzuela, Zea, Caldas, and his chief painters MM. Rizo and Mathis), as the most fertile countries of New Granada, the plains of Toln and San Benito Abad, the Andes of Quindio, the provinces of Santa Martha, Antioquia, and Choco, remained yet unexplored by any botanist. The larger the mass of materials gathered by this indefatigable *savant* grew, the greater the difficulties he encountered to publish the fruits of his labours. He had copies taken of the drawings in his *Flore de Bogota*, with the view of sending one to Spain, and of preserving the rest at Santa Fé. But how could it be hoped the scientific world should enjoy this immense work, when the *Flora Peruviana et Chilensis* of Ruiz and Pavon, notwithstanding the pecuniary succour of the Government and Colonies, hardly advanced at an extremely slow pace? Mutis was too much attached to the establishments he had founded—he was too fond of a country which had become his second home, to undertake, at the age of 76, a return to Europe.

He continued, till his death, to accumulate materials for his work without deciding on the mode of its publication. Accustomed to overcome apparently insurmountable obstacles, he dwelt with pleasure on the idea of establishing some day a press in his house, and of instructing his young indigenous pupils, who had learned to paint so successfully, in the art of engraving. Notwithstanding his advanced age, he undertook, in 1802, the construction of an observatory in the centre of his garden. It is an octagon tower, 72 feet in height, which contained, in 1808, a *gnomon* of 37 feet, a quarter circle by Sisons, Graham's pendulum which La Condamine had left at Quito, two chronometers by Emery, and a few of Dollond's telescopes.

Mutis had the good fortune not to witness the bloody revolutions which have devastated those lovely countries: he was overtaken by death 11th September, 1808, at a period when he was in the enjoyment of all the happiness that can be derived from the esteem of honest men, from literary glory, and from the certainty of having largely contributed to an improved social state in the New World, by his instruction, example, and the practice of every virtue.

We have given a brief sketch of the life of Mutis; we shall proceed to a summary mention of his labours, which embrace nearly all the branches of natural science.

Nothing remains of him but a few dissertations, printed in the Memoirs of the Royal Academy of Stockholm, for the year 1769, and in an excellent journal published at Santa Fé in 1794, under the title of *Papel Periodico*; but Linnæus's Supplement—the works of the Abbé Cavanilles, and of M. de Humboldt—the *Seminario del Nuevo Reyno de Granada*, edited by M. Caldas, in 1808-9, have published a part of his observations. We are ignorant of the fate of the manuscripts which this celebrated man left to the care of his friends and nearest relatives. M. Caldas, the director of the observatory of Santa Fé,—the favourite pupil of Mutis, Don Salvador Rizo, chief painter to the *Botanic Expedition*, and the greater part of the inhabitants distinguished for their talents and acquirements, were all put to death* during the unhappy reaction of the metropolis. The precious collection of paintings was sent to Spain, where had been previously remitted the inedited matter of the *Flore du Perou et du Mexique*. We hope that when political agitation shall cease in the Peninsula, and in the colonies, the labours of Mutis may not remain consigned to oblivion, like those of Sesse and of Mocino.

It was the communications which Mutis had made to Linnæus that gave him celebrity in Europe, long before the works he was preparing were known to exist. Most of the genera, *alstonia, vallea, barnadesia, escallonia, manettia, acæna, brathys, myroxylon, befaria, telipogon, brabejum, gomozia*, and many others, published in Linnæus's supplement, are due to the sagacity of the botanist of Santa Fé.

Speaking of the genus *mutisia*, Linnæus adds, *nomen immortale quod nulla ætas unquam delebit*.

It was Mutis who first made known the true characters of the genus cinchona. As this last has become of great importance, we shall endeavour to call to mind the opinions heretofore entertained respecting the *quinquinas* of the New World. La Condamine and Joseph de Jussieu had examined, in 1738, the trees of the forests of Loxa, which yield the febrifuge *quina*, or bark. The first-named has published a description and drawing of the Peruvian quinquina in the *Memoires de l'Academie*, the samo species made known by MM. Humboldt and Bonpland, under the name *cinchona condaminea*, and which botanists have long confounded with many other kinds, under the vague denomination of *cinchona officinalis*. This cinchona condaminea, also called *cascarilla fina de Loxa*,† *de Caxanuma*, and *de Uritusinga*, is the species most rare, most precious, and without doubt the kind originally employed. There are but 100 quintals exported annually from Guayaquil, a port of the South Sea.‡ The whole exportation of the different species of quina from America is annually 14,000 quintals. Linnæus had formed, since 1742, his genus *cinchona*, a name derived from a vice-queen of Peru. He could only have founded the *genus* on the imperfect description of La Condamine. In 1753, an intendant of the mint of Bogota (Don Miguel de Santestevan), visited the forests of Loxa, and discovered on his route, between Popayan and Quito, trees of quinquina in many quarters, especially near the village of Guanacas and the Sitio de los Corrales. He sent samples of cinchona to Mutis, and it was upon those samples that the latter made the first exact description of the genus. He lost no time in transmitting to Linnæus the flower and fruit of the yellow quinquina (cinchona cordifolia,) but the great naturalist of Upsal, on publishing the observations of Mutis, (Syst. Nat. ed. 12, page 164,) confounded the yellow quinquina with that which La Condamine had described. Up to that time, Europe only received the febrifuge bark by the ports of the South Sea. The tree which furnishes this precious production was not yet known north of the parallel of $2\frac{1}{2}$° lat. boreal. In 1772, Mutis discovered the quina within 6 leagues of Santa Fé de Bogota, in the woods of Tena. This important discovery was quickly followed, 1773, by another of the same plant on the route from Honda to Villeta, and at the Mesa de Chinga. We have entered into some details on this head, because the quinquina of New Granada, exported by Carthagena, and consequently by a port of the Caribbean Sea, nearer to Europe, has had the most beneficial influence on colonial industry, and on the diminution of the price of febrifuge bark in the markets of the old world. Mutis was right when he attached great importance to this discovery, for which he was never recompensed by his government. An inhabitant of Panama, Don Jose Lopez Ruiz, who himself acknowledges, in *Informes al Rey.*, never to have known the *quinquinas* of Honda until 1774, passed a long time for the original discoverer of the quinas of Santa Fé. He enjoyed as such a pension of 10,000 francs, until, in 1775, the viceroy of Gongona made known to the court tho priority of Mutis's rights. About the same period, (1776) Don Francisco Renjifo found the quinquina in the southern hemisphere on the slopes of the Peruvian Andes of Guanuco. It is now to be found in the whole length of the Cordilleras, at an elevation of from 700 to 1500 toises, upon an extent of above 600 leagues, from La Paz and Chuquisaca, to the mountains of Santa Martha and Merida.

Mutis has the merit of having been the first to distinguish the different species of Cinchona, some of which, with downy petals, are much more active than others whose surface is smooth. He has proved, that the active species, *whose properties vary with the organic structure and form, should not be indiscriminately employed*. The *Quinologia* of Mutis, which is about to be published at Madrid by M. Lagasca, and of which a fragment only has been inserted in the *Papel Periodico de Santa Fé de Bogota*, Feb. 1794, comprises the whole of his medical and botanical researches. That work describes a preparation of fermented quinquina, in great esteem at Bogota, Quito, and Lima, under the name of cerveza de quina (beer of quina.)

Amongst the useful plants in medicine and commerce, originally described by Mutis, we must reckon the *psychotria emetica*, or ipecacuanha, (*raisilla*) of the river Magdalena, the *toluifera*, and the *myroxylon*, which yield the balm of Tolu and of Peru—the *winteria granadensis*, near neighbour of the *canella alba* of our pharmacopœias, and the *alstonia theæformis*, which furnishes the tea of Bogota, the infusion of which cannot be too strongly recommended to travellers who remain any length of time exposed to the rain of the tropics.

At Mariquita, in a temperate and delicious climate, Mutis formed a small plantation of quinquina, cinnamon, (*laurus cinnamomoides*,) which abounds in the missions of Andaquies, and of indigenous nutmeg (*myristica otova*.) The name of this celebrated botanist is also attached to a discovery which has greatly interested the public mind in America. It was known that the Indians and negroes who worked at the *lavaderos* (washings) of gold and platinum, in the province of Choco, were possessed of what they called the secret of a plant, the most powerful antidote against the bite of venemous serpents. Mutis was enabled to discover the mystery, and make the plant known: it is of the family of the compositæ, and is known in its native country by the name

* Note by Tr.—By the Spanish general, Morillo, Caldas requested a respite for a few days to regulate "*papers of interest to the world*,"—the stern tyrant refused.

† The cascarilla fina of Loxa (orange coloured and primitive), called also by the natives of Loxa, *cascarilla de Urituzinga*, that is, in the Quichua tongue, *bear's nose*, the highland forest in which it grows, having a profile when viewed from the vallies, somewhat resembling that of a bear.—Tr.

‡ A Port of the Republic of the Equator on the Pacific Ocean.

of *vejuco del guaco*.* MM. Humboldt and Bonpland were the first to represent it, (*v. Mikania Guaco*, in the *Plantæ Æquinoctiales*, vol. 2, p.85, pl. 105.) This plant has a nauseous odour, which appears to affect the olfactory organs of the vipers. The scent of the guaco mixes itself, no doubt, with the cutaneous transpiration of man: one is considered out of danger after a space of time, more or less, when the patient has been *curado*, that is, when inoculation of the juice of the guaco into the dermoid system has been effected. Bold experiments made in the house of Mutis by MM. Zea, Vargas, and Mathis, and during which they were seen to handle with impunity the most venemous vipers, have been described in the *Seminario de Agricultura* of Madrid, 1798, vol. 4, p. 397. As the guaco has been found in several of the warm vallies of the Andes, from Peru down to Carthagena, and on the mountains of Varinas, a great number of persons owe their recovery to this valuable discovery of Mutis. It is to be regretted that this plant, which has been frequently confounded with the *Ayapana*, loses its virtue when the leaves and trunk are preserved in alcohol. The guaco is not found everywhere that serpents abound.

We know but little of the zoo'ogical and physical labours of Mutis; but we are aware he studied for a long time the habits of the ants and termites, which in America, as in Senegal, construct mounds from five to six feet in height. He had painted a number of the mammiferous species, of the birds and fishes of New Granada. He has described, according to the Linnæan method, in the *Memoires de l'Academie de Stockholm*, of which he was a member, a new species of marten, (*viverra mapurito*.)

The manuscripts of Mutis also contained a great number of valuable observations on the *atmospheric currents*, which appear much more distinctly under the tropics than in the temperate climates, by the horary variations of the barometer. This instrument rises and falls, at the level of the sea as on the highest table land, four times in 24 hours under the torrid zone, with such regularity, that one may tell, to within a quarter of an hour, the time of day, by the simple inspection of the column of mercury.' It appears that this curious observation, which has so much excited the attention of scientific men, and the discovery of which La Condamine (*Voyage à l'Equateur*, p.50), has so falsely attributed to Godin, had been already made at Surinam in 1722, (*Journal Litteraire de la Haye* for the year 1722, p. 234.) Father Bondier (1742), employed it at Chandernagor; Godin (1737), at Quito; Thibault de Chanvalon (1751), at Martinique; Lamanon, in 1786, in the South Sea: Mutis avers having found that the moon exercises a sensible influence on the period and on the extent of the horary variations, (Caldas, *Seminario de la nuevo Reyno de Granada*, vol. 1, p. 55 and 361, No. 3.)

The man who has displayed such astonishing activity during forty-eight years of labour in the New World, was endowed by nature with a most happy physical constitution. He was tall in stature; his features bore the imprint of nobleness; his air was grave, and his manners easy and polite. His conversation was as varied as the objects of his studies. If he frequently spoke with warmth, he also loved to practice that art of listening to which Fontenelle attached so much value, and which he found so rare in his days. Although much occupied by a science which requires the most attentive study of organization, Mutis never lost sight of the great problems respecting the *physique* of the universe. He travelled over the Cordilleras barometer in hand. He determined the medium temperature of those table lands, which appear, like islets, in the middle of the aerial ocean. He had been struck with the aspect of the vegetation, which varies according as we descend towards the vallies, or climb towards the frozen summits of the Andes. Every question connected with the geography of plants was to him of the most lively interest, and he sought to delineate the limits more or less, betwixt which, on the mountain declivities, grow the various species of Cinchona.

This taste for the physical sciences—this active curiosity directed to the development of the phenomena of organisation and meteorology, maintained the empire of his mind to the last moment of his life. Nothing proves better the superiority of his talent, than the enthusiasm with which he received the intelligence of any important discovery. He had not seen a chemical laboratory since 1760; but the perusal of the works of Lavoisier, of Guyton de Morveau and Fourcroy, had offered him the most valuable knowledge of the state of modern chemistry. Mutis encouraged with great interest the young people who manifested a disposition for study; he furnished them with books and instruments, and sent many to travel at his proper cost

After having spoken of his liberality, and of the daily sacrifices he made to science, it is unnecessary to extol his disinterestedness. He enjoyed all his life the confidence of the viceroys, who exercised unlimited sway in those countries; but he only employed his credit for the benefit of science—to make known modest merit, or to plead with courage the cause of the unfortunate. His only ambition was to aid in the triumph of justice and of truth; he fulfilled with zeal, it may be said with austerity, the duties he had imposed on himself, in embracing the ecclesiastical profession, but his piety sought not the eclat of renown—it was mild and sincere, as it ever is, when found combined with feeling and elevation of character.

* Found chiefly in Zaruma, a canton of the province of Loxa, abounding in venemous reptiles.—Tr.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—June 27th.

Mr. Stanley, President, in the Chair.

Some account of a Case in which a Foreign Body lodged in the Trachea. By Sir Benjamin C. Brodie, Bart., Sergeant Surgeon to the Queen.

On the 3rd of April, Mr. B——, while engaged soon after dinner in amusing some children, passed a half sovereign into his mouth, which slipped behind his tongue, and brought on a violent fit of coughing, so that he was nearly choked. This was followed by vomiting, when he threw up the contents of the stomach, and strained several times afterwards, but still he did not return the coin. In the course of the evening he coughed at intervals, but not violently, and there was soreness of the throat for the next twenty-four hours. The two following days he scarcely experienced any inconvenience, so that he employed himself as usual, and had friends to dine with him. On the 6th he was again troubled with a cough; on the 7th he took a journey into the country, and was exposed to the north-east wind for two days and a night; the cough became more troublesome, he expectorated mucus tinged with blood, and experienced pain in the situation of the right bronchus. On the evening of the 9th he took two aperient pills, one of which he vomited, when he had a sensation in the chest, as if a loose body had shifted its situation. The cough continuing, Dr. Seth Thompson examined the chest with the stethoscope, and could not distinguish any abnormal sounds. The symptoms continuing, Dr. Thompson advised that Dr. Chambers and Sir B. C. Brodie should be consulted, and by them it was considered that the symptoms indicated the presence of the half sovereign in the right bronchus. Mr. B. placed himself on an inclined plane, and could feel the body moving, but a violent fit of coughing was induced, and he was obliged to desist. On the 21st a consultation was held between Dr. Chambers, Dr. Seth Thompson, Sir B. C. Brodie, Mr. Key, and Mr. Stanley, when no doubt was entertained of the presence of the coin in the trachea, although there could not be detected any difference in the respiration by the stethoscope. On the 25th Mr. B. was placed on a platform, made moveable by a hinge in the centre, so that when one part was elevated, the other could be depressed, and when brought to an angle of 90 degs. with the horizon, he was struck sharply on the back, opposite the right bronchus, by which a violent fit of coughing was caused, but the half-sovereign was not ejected. This experiment was tried twice, but the cough caused by it was so oppressive, and the symptoms of suffocation so alarming, that it was deemed not prudent to proceed any further with it. On the 27th it was determined in consultation to make an opening between the thyroid cartilage and the trachea, with a double object; it might perhaps be possible to extract the coin through the aperture, or at all events it might serve as a safety-valve, when the experiment of placing the patient on the platform was again tried, to prevent the dangerous fit of coughing previously induced. The operation was accordingly performed by Sir B. C. Brodie, assisted by Mr. Aston Key, and the forceps introduced, with the hope of extracting the coin, but their use caused such contraction of the diaphragm and abdominal muscles, and such a violent fit of coughing, that it was necessarily abandoned. The attempt however was repeated on the second of May, but such violent convulsive action was again produced, and the danger appeared to be so great, as not to warrant any further proceeding. The next day a consultation was held with Mr. Lawrence, and Mr. Stanley, who concurred in the views previously taken, and it was decided that nothing further should be done until Mr. B. had recovered from the effects of the previous proceedings, and then again to place him on the inclined plane of the platform. The opening in the trachea meanwhile to be kept patent by proper means. On the 13th the patient was again put upon the platform, and struck upon the back with the hand; this induced cough, and he felt the coin quit the bronchus, and almost at the same instant strike against the teeth and be ejected: it was followed by a small quantity of blood. The patient went on well after this, without either cough, inconvenience or distress, and in a short time was so far recovered as to be able to go into the country. When seen by Sir B. C. Brodie about a fortnight ago, the wound in the trachea had nearly healed.

The difference of the effects produced by foreign bodies in the trachea, depends on their size, weight and figure; if they are large, they probably stick in the trachea and become impacted, offering an obstacle to the respiration, which, in a few days, is increased by the secretion of mucus; if of small size, they will fall into the lower part of the windpipe, or into one of the bronchi, generally into the right one, or

even it may be into one of the subdivisions. If they be light, and of moderate size, they may be caused to ascend from time to time by the act of respiration, inducing violent cough and difficulty of breathing, and ultimately causing suffocation. If they be heavier, they will not move about in the trachea, and then the cough and danger will be comparatively less. In this case, all the symptoms indicated that the coin was in the right bronchus, and this opinion was corroborated by the experiments of Mr. Aston Key, which were afterwards repeated by Sir B. Brodie, in which a coin of a half-sovereign weight dropped into the trachea, and thence into the right bronchus: its weight would keep it nearly stationary, and, therefore, there would be less distress produced; but if it had been allowed to remain, disease of the lung would be ultimately induced, and cause death. The narrow space occupied by it, would account for its non-detection by the stethoscope; but even in more favourable circumstances, the stethoscope would be of no use. A case was seen by Mr. Hodgson of Birmingham, of a little boy, six years old, who had a seed of the bladder senna in his windpipe; in this case the stethoscope did not give any indications. The boy died suddenly on the ninth day, and the berry was found lodged in the lining membrane of the trachea just below the cricoid cartilage. Mr. Phillips, the surgeon to the Marylebone Infirmary, and librarian of this society, also had a case of a little girl, in whom no stethoscopic indication could be perceived, and yet after death part of the claw of a lobster was found sticking in the lining membrane of the trachea just above the sternum.

It has been stated that there were two objects in opening the trachea; one of these was every way successful. Before the opening was made, the inversion of the body was productive of great distress, which did not occur afterwards. The distressing sensation about the head from the increase of blood in the brain, and the obstruction to the circulation was relieved, by supporting the forehead with the hand. The other object in performing the operation was a failure. On the dead body a coin might be extracted without great difficulty, but not even then would the surgeon be always successful. In attempting to seize it, he might sometimes grasp the bifurcation of the trachea, or pass the instrument behind or beside the coin, nor will this appear extraordinary, when it is considered that the parts are entirely out of sight, and the instrument must be passed four or five inches down in the trachea. But in the living person there are still greater difficulties; in this case it was found that every attempt caused convulsive action of the diaphragm and abdominal muscles, and violent coughing, and, contrary to the opinion of Magendie, the same effect was produced whether the instrument was passed upwards or downwards.

Mr. Quain observed that there were many points of importance in the paper which had just been read. One of these was the different degrees of sensibility in the trachea; at first there was none at all, but after the incision had been made, and the forceps used, it was excessive. Was this owing to a certain degree of inflammation having been set up? He knew a person who had breathed for two years through a tube. The injury arose from his cutting his throat, the subsequent inflammation causing adhesion of the epiglottis to the glottis. He believed that in this case it was owing to the nature of the coin, it not being acted on by the secretions, that prevented its producing much irritation; had it been of copper, brass, &c., it would have been otherwise. A foreign body in the trachea brought down to the larynx, produces violent coughing. Was its passing through the rima glottidis in this instance, after the incision had been made, without causing suffocation, accidental or not? He (Mr. Quain), believed it to be accidental. He would be inclined, if such a case were to occur to him, to place the patient in the inclined position, so as to bring the foreign body near the larynx, then make an incision, and extract it with the short forceps.

Sir B.C. Brodie remarked that in this case the difference between the irritation caused by the half sovereign and the forceps was, because the former was nearly, if not quite, immoveable, while the forceps were necessarily moved about. If it had been possible to have kept the latter pressed against one point of the trachea, they perhaps would not have caused any irritation. The difference in the effect produced by the inverted position, before and after the incision had been made, was so great that it was impossible not to attribute it to the operation; it could not be accidental; the danger of the inversion of the body was so great, without having previously practised an incision that no surgeon would be warranted in having recourse to it.

Mr. Arnott inferred that the opening beneath the rima glottidis relieved the spasm, as he had seen in cases of cut-throat, the food pass through the glottis and out at the wound, without inducing coughing. When he first heard of the coin, he did not judge the coin could have been extracted by the surgeon, but thought that when the incision was made, it would be ejected through it, which he believes would have occurred, but for the weight of the half-sovereign. Such occurrences are mentioned by the older writers.

Mr. Cæsar Hawkins considered that in such cases if the rule of operating early were generally adopted, whether the foreign body was extracted or not, many valuable lives would be saved. He was of opinion that the increased sensibility of the trachea was caused by the long residence of the foreign body. He had had two cases illustrative of this rule; in the one a bit of bone, in the other a softer substance, a piece of meat, was in the trachea. The opening was made early, and the bone was extracted by the forceps. The piece of meat was coughed up two hours after the incision had been made. Both cases did well. An intelligent pupil of St. George's Hospital, now practising in the country, had had a case where a tamarind stone was in the trachea. He introduced the forceps through the glottis; the stone was not extracted, but still no irritation was produced.

Mr. Arnott thought that the sensibility of the trachea in these cases varied in a few minutes. When the operation of tracheotomy was performed for the relief of difficult breathing, on the introduction of the canula a violent fit of coughing, with apparent suffocation, was induced, which however soon subsided, and the breathing was relieved, without requiring the withdrawal of the instrument.

Dr. Webster mentioned a case recorded in one of the German journals, in which a cherry-stone had got into the windpipe. Tracheotomy was performed on the 4th day, and the little finger introduced into the wound: when passed in for the third time, a violent fit of coughing was induced, and the cherry-stone ejected. A case also is recorded of a gold coin remaining four years in the trachea, and not extracted ultimately. The patient died phthisical.

Mr Cæsar Hawkins expressed his opinion that if in the case last mentioned by Dr. Webster, an early opening had been practised, the patient would not have died of phthisis.

Mr. Charles Hawkins remarked that there were not any cases on record of coin having been spit up. In the instances that had occurred, they were all light bodies, such as peas, beans, etc.

Mr. Aston Key stated that Dupuytren, in his *Leçons Orales*, mentions a case of a person in whom a half franc piece passed into the trachea, inducing a violent paroxysm of coughing which ultimately subsided. The patient lived ten years afterwards, and died at last of phthisis. On examination of the body, the coin was found imbedded in a large vomica, and, there was every reason to believe was the cause of death.

A member afterwards narrated the case of a person at St. Thomas's Hospital, having a four-penny piece in the trachea, which he threw up in a fit of coughing.

MEDICO-BOTANICAL SOCIETY.

June 22nd,

Earl Stanhope, in the Chair.

A paper on the "Dictamnus Crœticus," by Mr. Bennett, was read. The origanum dictamnus is a small shrubby branched plant, with square stalks, short broad roundish leaves, covered with a thick white down, set in pairs at the joints, and purplish libriated flowers, in loose scaly drooping heads or spikes. It is a perennial plant, a native of Candia; it flowers in July. The dittany of Crate was very famous among the ancients; it has been celebrated by Hippocrates, Aristotle, Theophrastus, Cicero, Dioscorides, Pliny, Galen, &c. Of the many properties attributed to it, its emmenagogue, alexipharmic, and vulnerary, appear to be the chief. It is used in infusion, and the leaves are smoked; its juice is used externally. The leaves of the dittany, when in perfection, have an agreeable aromatic smell, and a hot biting taste, and impart their virtues both to water and rectified spirit, tinging the former a yellowish, the latter of a green colour. They contain a yellowish essential oil, of a highly pungent aromatic taste and smell, which congeals in the cold into a mass having the appearance of camphor. Not more than half a drachm of the essential oil can be procured from a pound of the leaves. A sketch of the botanical labours of Mutis, the botanist of New Granada, termed by Linnæus "Phytologorum Americanorum Princeps," from the pen of Humboldt, translated by Col. Wright, late Governor of Loxa, was then read, after which Observations on Quina by Don Celestino Mutis, also translated by Col. Wright, was read. Dr. Sigmond made some remarks on a large collection of recent medicinal plants, with which the tables were covered, more especially upon the digitalis, the belladonna, conium, the æthusa, cynapium, &c.

PERISCOPE OF THE WEEK.

(Lancet; Medical Gazette: Edinburgh Medical and Surgical Journal; Oerster. Med. Wochenschrift; Casper's Wochenschrift; Berliner Med. Central.Zeitung; Froriep's Notizen; London and Edinburgh Medical Journal; Gazette Medicale; American Journal of the Medical Sciences.)

Paralysis.—Under the title "Infantile Paralysis," Dr. McCormac, of Belfast describes the case of a young lady, who had been paralytic of one lower extremity for about twenty years. He found the limb, up to the hip, which was considerably developed, completely attenuated, in fact not thicker than that of a child three years of age; the foot was small and completely flaccid, and there was no protuberance in the region of the calf. The integuments were every where flaccid and very

cold, and a considerable swelling existed at the knee, where a steel-boot, weighing between 4 and 5 pounds, and reaching as far as the pelvis, had been attached. By means of this contrivance, assisted by the action of the glutæi muscles, and those of the trunk, the other leg serving as a fulcrum, was this poor girl slowly and painfully enabled to move about. The spine was well formed, free from any unnatural curve or tenderness on pressure, the limb of the same length as the one on the opposite side, the body well developed, and the constitution free from serious disease. In the hope of remedying this condition, the patient was made to exercise twice a day on a horizontal bar erected for the purpose. to incipient fatigue, and have the whole surface, the spine particularly, sponged daily with cold water, and afterwards well rubbed. Passive exercise was assiduously resorted to during all waking intervals; the withered limb was flexed and extended in every joint, the hip, the knee, the ancle chafed, rubbed, and gently pinched, and at the same time, rotated, abducted, and adducted. The steel boot was dismissed. The power of using the limb at first was almost nothing, but by degrees it became greater; the patient could flex and extend, rotate, and use lateral motion; all this at first very feebly, but each day brought fresh though trifling improvement. The limb gained progressively in circumference; superficial veins became evident; a small but not unsightly calf appeared on the leg, the foot became larger, and less flaccid, and she could with a little assistance support herself erect, and even proceed a little in advance. After four or five months treatment, Dr. M'Cormac's patient can walk across the square in which she lives, and he does not despair of her perfect recovery.

Spermatorrhœa.—Mr. Phillips, surgeon to the Marylebone Infirmary, has treated within three months no less than 33 cases of involuntary seminal discharges; in 24 of these it was admitted that masturbation had been practised, in some cases as frequently as two or three times a day, but in all it was stated that the habit had been abandoned. In two it was altogether denied, the complaint being then only referable to a natural phimosis: in two instances it was said to be the result of sexual excesses, in other two of stricture, in one from frequently reading lascivious books, and in one from study, or the perusal of works of the imagination. In some of these the discharge did not happen more than once a week or ten days, in others daily two or three times a day, the effect on the constitution varying quite as much, some of those in whom the emission was hebdomadal only, suffering more than those in whom it occurred daily. In two cases the complaint co-existed with epilepsy: in other two there was considerable digestive disturbance, and in most there was constipation, which, unless attended to, augmented the general distress. In five cases palpitation of the heart was complained of, in four swimming in the head, failing memory, and inability to apply to any thing. With regard to treatment, seven are still under care; five of these are doing well, the others are not so satisfactory. Of the other 26 cases, eighteen have been more or less completely relieved; in eight instances no sensible permanent good was derived either from caustic or other remedies, though there was complete remission of the discharges for many days. In more than one of these cases Mr. Phillips suspects the mischief was kept up by an imprudent but concealed habit. The plan of treatment depended on the circumstances of the case. In seven no acute pain was felt any where during the passage of the bougie; in one it occasioned a feeling as if a seminal emission was about to occur. In these the effect of the bougie smeared with mercurial ointment or merely oiled, and introduced twice a week, was tried; there was a considerable improvement in several cases, but complete relief was obtained in two only. Caustic was used in nineteen cases, ten of which were completely relieved by a single application: in three the amelioration was decided, though the complaint was not cured, in six there was not any relief. In these nine cases the remedy was again used, in three with complete success, the other six not being benefitted, so that it succeeded in two thirds of the cases in which it was applied, a result which, if confirmed by succeeding experience, will stamp it as a remedy of great value. In no case was there any aggravation of the symptoms caused by it, nor was there any complaint of pain; in one only did it induce any after inconvenience. Mr. Phillips is of opinion that the remedial influence of caustic is experienced only in those cases in which a very excited sensibility exists beyond the curvature, the disease seeming to depend upon the irritability seated in the vicinity of the opening of the ejaculatory ducts. In some cases this is so remarkable that the passage of a bougie over the part may actually induce emission. In the cases where no such irritability exists, the exciting cause of the emission is habit.

Closure of the Vagina.—Mr. Dendy states that congenital adhesion of the labia is merely by a thin film, the division of which does not require cutting. A common probe pressed on the fissure from behind instantly relieves the labia, without any expression of pain from the child. The epithelium is somewhat thinner in the line of adhesion. In cases occurring subsequent to birth, the adhesion is not the effect of plastic lymph, but of a glutinous oozing, probably from the follicles at the edge of the labia. It is always as easily relieved without cutting.

Fatal Wound of the Chest.—Mr. M'Pherson, of Horncastle, relates the case of a man who was wounded in the chest by falling on a pitchfork, one of the prongs of which entered the cavity between the sixth and seventh ribs, severely lacerating the lung, and slightly injuring the diaphragm. The principal symptom, besides the evident effect of the shock in causing apparent syncope, was constant vomiting, induced in all probability by the injury inflicted on the diaphragm. The man died the next day. We notice the case principally to comment on the treatment adopted, which was markedly injudicious,—while the man who, by the way, had been previously labouring under diarrhea for eight days, lay in a state of apparent syncope and exhaustion, his strength reduced (to use Mr. M'Pherson's own incorrect phrase,) by incessant vomiting, that he only begged to be left alone, all these being symptoms of the shock and of great nervous depression, the surgeon practised *bleeding to the amount of* 18 *ounces*, thus of course adding very materially to the mischief already inflicted. Our only wonder is how he contrived to obtain the blood—the report on seeing the patient in the afternoon of the following day was of course,—he was found almost in *articulo mortis*, and still making ineffectual attempts to vomit. Stimuli were then ordered, but too late, for two hours afterwards death closed the scene. While thus condemning the practice pursued in this case we by no means intend to infer that a contrary mode of treatment would have saved the patient's life—we would merely state that in our opinion he had not a chance afforded him, since the powers of resistance, exhausted as they were to a fearful extent by the injury he received, were still further struck down by the depleting practice adopted on the occasion. Mr. M'Pherson was evidently frightened by the bugbear inflammation, which would necessarily follow such extensive injury, and did not afford nature, time, and the means to recover from the collapse. Injuries as severe have been recovered from, nor is laceration of the lung unless to a very great extent, nor wound of the diaphragm necessarily fatal.

Empyema.—The case of a man labouring under inflammatory symptoms in the left side of the chest, which were reduced but not removed by the treatment adopted, is recorded in our northern contemporary. After the treatment had diminished the acute severity of the disease, there still remained the fixed pain near the scapula, frequent cough, copious expectoration, and a total inability to lie upon the right side, any attempt at which greatly aggravated the cough and dyspnœa. Debility and emaciation progressively advanced, and a fulness was observed over the left side of the chest, which sounded dull on percussion, and the respiratory murmur was very faint; a few days after, a soft tumour appeared on the fifth intercostal space, an inch below and to the outside of the left nipple, which ulcerated the next day, and discharged freely, pus coming away to the extent of about a pint daily by the wound, and after a time also by the mouth. The cough and dyspnœa were thus greatly relieved; a generous diet with porter, quinine, &c. was prescribed, and he improved somewhat in strength, remaining very weakly however until the discharge ceased, and the wound closed, leaving a flattened thimble-like cavity into which the point of the finger could be introduced. The patient has since progressed in strength. Upon examination, the movements of both sides of the chest are equable, and the respiratory murmur natural, as also the sound elicited by percussion.

Induration of the Stomach in an Infant.—Dr. Simon Dawosky was summoned to see an infant nine weeks old, which had suffered from continual vomiting for the preceding five weeks, and had become very thin in consequence. The epigastrium was painful on pressure, but no tumour could be detected. The child died in a few days. On examining the stomach, a hard tumour about the width of two fingers was discovered, and on opening the viscus, its parietes were found to be generally hard and thickened. The thickening, which appeared to be owing to hypertrophy with induration of the sub-mucous cellular tissue, was very trifling at the cardiac orifice, but gradually increased towards the pylorus, where it formed a tumour as large as a nut, of a pearly white color, cracking under the scalpel, and not presenting any traces of vascularity. The pyloric orifice was exceedingly contracted, so that a full sized probe could scarcely pass through it. The induration and thickening were less at the commencement of the duodenum; the other intestines did not present any thing particular. The child was reported to have been healthy and robust at its birth and for four weeks afterwards, so that it becomes a question very difficult to solve, whether this disease existed in the fœtus or was produced after birth. It seems hard to believe that such extensive alteration of structure could have been caused in six weeks, the apparent period of the continuance of disease. The case is interesting in another point of view, as shewing that a disease resembling schirrhus of the pylorus may occur in the infant as well as in the adult.

Biliary Calculus.—In 1841, M. Klemm, of Greunen, was consulted by an old lady who complained of a dry cough, and a tumour in the right hypogastrium, which was discovered on an attentive examination near the right hypochondrium, below the false ribs, as large as a goose's egg, hard, moveable, and yet adherent to the abdominal integuments. Pressure caused pain, which was felt throughout the hepatic region. The general health was good in all respects. Inflammation came on in a few days, followed by suppuration; fluctuation being evident, an incision was made, and the contents evacuated; the shape and hardness of the tumour continuing, a probe was passed in about three inches deep, and a hard circumscribed body found. The incision was then enlarged, and this foreign body extracted; it was enclosed in a very dense cyst situated between the muscles of the abdominal parietes. It proved to be a biliary calculus of great size, having the shape of the gall bladder but much larger; its external surface was of a deep brown color, the internal of a bright yellow. A nucleus was found in the centre, whence sprung almost crystalline rays. It was friable, very combustible, and gave out a peculiar odor when burning: it was perfectly soluble in turpentine and sulphuric ether. It weighed six drachms two grains; its specific gravity was less than that of water.—The patient perfectly recovered after the extraction of the calculus.

Congenital Sacciform Dilatation of the Urethra.—M. Hendriksz of Amsterdam, has published the details of a very singular congenital deformity, on which he operated successfully. A boy, eight years of age, was brought to him, having a sacculated appendix along the lower surface of the penis, extending from the arch of the pubes to the fossa navicularis, which received and retained the urine when the bladder was emptied, nor could any of it be evacuated by the meatus without pressure on the sacculated urethra. On exploring with the sound, the upper paries of the urethra was found to be natural, the lower one having a loss of substance supplied by this pouch. M. Hendriksz having determined on attempting the excision of the sac, the reunion of the edges of the wound, and the formation of a cylindrical canal, the patient was placed as for the operation of lithotomy, the sac distended with warm water, a sound passed, and the penis turned back on the abdomen. The pouch was then circumscribed by two semi-elliptical incisions, commencing on the median line from behind the gland, and meeting behind the tumour equally on the raphe. This part of the skin having been removed, the proper tunic of the pouch was discovered; it was very thin, and consisted of the membranes of the urethra, the fibres of which were much separated. This was also excised with scissors, allowing the escape of the water, and permitting the catheter to be seen passing along the upper surface of the urethra. The urethral mucous membrane was then found to form two valvular folds at the anterior and posterior orifices of the sac, which were destroyed, and the membrane of the urethra separated from the integument to the extent of several lines, in order that it might unite separately. This was effected by 15 points of knotted suture; the integuments being reunited by seven points. A compress and bandage was applied, and the catheter retained in place as long as the patient could bear it. The instrument was passed afterwards whenever it was necessary, care being taken to direct it along the upper surface of the canal. The wound cicatrised with remarkable rapidity, so that eight weeks afterwards, there was only a small point, about two lines in diameter, unhealed and fistulous, through which a few drops of liquid passed when the little boy made water. This gradually diminished under the influence of repeated cauterisation with the nitrate of silver, until it was only a pin's head in size. The child was then taken away, and M. Hendriksz has not heard from it since, so that he supposes a perfect cure to have been effected.

Cure of Artificial Anus.—Mr. Malcolm of Boston, was consulted by a farm labourer, 47 years of age, who had an artificial anus in the left groin, following an operation for strangulated hernia. The wound occupied the middle third of the sulcus which divides the thigh from the abdomen, was two inches long, irregular and inverted in its edges, but capable of complete closure by the semi-bending of the thigh on the abdomen. The internal orifice was determined to be about the size of a shilling. The patient's health suffering greatly from this disgusting deformity, M. Malcolm incised the edges of the wound, bringing them afterwards into close contact, with a view to produce adhesion of their surfaces. The instruments employed for the purpose were, a bit of iron wire bent into a parellelogram of the length and depth of the wound, and a common scalpel. By inserting the former perpendicularly into the wound, and pressing first on one side and then upon the other, so as to make the respective walls of the wound to protrude through the opening, the necessary slice to be removed was thus conveniently brought within reach of the scalpel, and the operation was performed without pain or loss of blood. Union took place by the first intention, and the man was cured in thirteen days.

Ligature of Arteries.—Mr. Spence believes that the lymph effused on the exterior of a ligatured vessel, plays an important part in its closure, because if we examine an artery which has been tied, forty-eight hours after the operation, we find it surrounded for a considerable distance, above and below the ligature by a deposition of pretty firm lymph, which presses upon and adheres to the coats of the vessel, completely imbedding the ligature, which is deeply sunk between the ends of the artery. At this period the adhesions of the lymph to the arterial parietes, though distinct, are comparatively slight. When examined ninety-six hours after ligature, the effused lymph, though diminished in bulk, has become much firmer, and is, as it were, concentrated round the vessel; and when the external portion is dissected off, we see distinct filamentous bands passing from one end of the vessel to the other around its entire circumference. If examined at the ninth day after the operation, that is, when the ligature is separating, we find that the thread is enveloped in a tubular sheath of lymph—, that the deposit round the vessel itself is now very dense and firm, and if the ligature be partially separated, we find that the effusion of lymph has kept pace with its separation, and united the ends of the vessel at the point, whence the ligature has separated immediately behind the thread. On the 13th day, that is when the ligature has fairly come away, the lymph has assumed the appearance of a firm connecting medium, uniting the divided ends of the vessel, not unlike the exuberant callus in a fracture; at the 28th day in some, but later in other cases, it has become much absorbed, so that the vessel has then the appearance of a firm impervious cord, at the part where the effused lymph formerly existed.

Pseudo-Eructations.—Dr. Child remarks that flatulence, a frequent concomitant with hysteria, is in some cases of hysterical disorders only apparent, and belongs to the class of mimoses. When the face of a person affected with this pseudo-flatulence, is watched steadily for a minute or two, a characteristic expression may be observed, although it cannot be described further, than it is quite different from that of a person who is actually bringing up wind. The face is kept averted, and the quantity of air which passes out seems very little, when compared with the efforts made for its expulsion. The mouth is kept constantly shut, so that the air passes from the nose only, and sometimes the mouth is held firmly by the hand, or the nostrils even are partially closed by it. The fit can instantly be stopped, by simply causing the patient to keep the mouth open. During its continuance, there is much irregular and tumultuous action about the upper part of the throat, (the muscles of the tongue and pharynx, and the levators and depressors of the larynx being chiefly involved) and the mouth and nares being closed, the compressed air is forcibly made to circulate about the different parts of the mouth and pharynx, producing a loud rumbling noise, giving a semblance of flatulence, which does not really exist.

Disease of the Antrum.—William Nairns, 26 years old, applied to Mr. Syme, he having a tumor of five months' duration, on the left side of the upper jaw, extending between the canine and wisdom teeth, and presenting the watery whitish colored aspect of the ordinary epulotic growth. Mr. Syme made a single incision from the prominence of the cheek to the angle of the mouth, slightly curved with its convexity downwards, and then dissected up the flap thus formed. He was obliged to remove the whole of the superior maxillary bone, except its posterior protuberance. The edges of the wound were brought together by the interrupted suture, and it healed by the first intention, leaving hardly any perceptible cicatrix, or paralysis of the face. On examining the part removed, the cavity of the antrum was found to be entirely occupied by a bony shell, presenting an uniform smooth convex surface towards the orbit, and forming a cavity which communicated with the mouth by a small aperture in the centre of the excrescence. The interior was lined with pendulous bodies of consistence, and other characters similar to those growing from the gum and palate. It thus appeared, that the floor of the antrum had been expanded upwards, so as to fill it, and cause absorption of its anterior wall by pressure. Mr. Goodsir who carefully examined the case, states, that the morbid condition was new to him, and Mr. Nasmyth, to whom the preparation was shewn, does not recollect meeting with a similar state of disease. Mr. Syme considers it to have been merely a peculiar form of the ordinary epulotic growth. Mr. Syme remarks on the operation, that this case confirms him in the opinion, that a single incision will afford sufficient space for the removal of the superior maxillary bone, and is adapted for all such cases, except when the integuments have been so stretched by the tumour as to require reduction of their extent by the excision of a portion, in the which case, one incision might still be made from the prominence of the cheek to the angle of the mouth, and another afterwards, so as to include a crescentic-shaped portion of sufficient breadth.

Schirrhus Uteri.—Schirrhous degeneration of the cervix uteri, is an affection constantly occurring in the course of practice. This disease sometimes gives rise, at an early period of its progress, to severe pains and sufferings in the uterine region, to great local irritation of the bladder and neighbouring parts, and to the supervention of marked sympathetic

and constitutional phenomena. In other numerous instances, however, it marches onwards to an advanced stage, without occasioning almost one single symptom in the way of local pains, discharges, or otherwise calculated to rouse the attention of the patient to the impending work of destruetion that is, with slow, but fatal, steps, going on within. Here Mr. Simpson says he has repeatedly seen eases of the kind, where the disease was under assiduous treatment for simple leucorrhea, or menorrhagia, merely because no examination had been instituted, in order to learn upon what loeal states the leucorrhea or menorrhagia depended. In other cases, the intensity of the sympathetic or secondary symptoms, may be sueh as to conceal and disguise entirely the primary disease. In an instanee of fatal carcinoma uteri that occurred lately in Edinburgh, the symptoms complained of during the lifetime of the patient, were entirely referred to the urinary, and not to the uterine organs. Dr. Simpson has known the mamma most aetively treated by leeching, &c., for the sympathetic pains present in them, while the state of the uterus itself (the primary cause of the pains), was altogether held out of view, until at last, when attention was ultimately called to it, its whole cervix was found to be utterly destroyed by eancerous ulceration.

Enlargement of the Tongue.—M. Ruhbaum, of Rathenow, was consulted respecting a boy six years old, whose tongue was swollen to such an extent that it was too large for the mouth, and projected externally. It was of a dark red colour, soft and painful on pressure. Mastication and deglutition were very diffieult but not painful; respiration nasal. The child was eured in a short time by the daily use of purgatives, and by washing the mouth every quarter of an hour with a chloruretted lotion.

Honour of the Profession.—There is a rumour afloat, and much eredited, whieh, as involving the charaeter of a high member of our Surgieal "Conneil," cannot be too soon eontradicted. It is said that a lady, suffering under cataract, called on a late President of the College of Surgeons, and after mentioning that she was advised to undergo an operation for its removal, if he and Mr. Alexander thought it right, a consultation was agreed on. The hour was named—the lady is punctual—the operation is unsueeessfully performed, and it is only by an accident that the lady learns that the operator was not Mr. Alexander, as supposed, but the ex-president's son. This is a report unfortunately very current in the high circles of the profession, and believing it to be utterly impossible to be true, we the more readily take this means of ealling Mr. Guthrie's attention to what might otherwise do him great mischief, and give him an opportunity of giving the lie to so calumnious an imputation.

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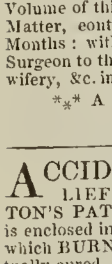

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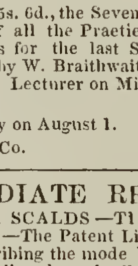

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MR. EVANS has made a new and valuable discovery of a Plant, which is superior to Tea, and has succeeded (by submitting it to heat and other chemical experiments) in bringing it to a high state of perfection.

It is a beautiful beverage, superior to tea for health and economy; it is more than three times the strength, at half the expense.

It forms a rich, nutritious, aromatic, and delicious beverage; unlike tea, it does not injure the nervous system. It is most pleasant and invigorating, and is recommended to the debilitated for its invaluable qualities, to advanced age for its strengthening properties, and to the public generally, for its moderate price and intrinsic excellence.

It neither has the stimulating and heating effect of coffee, nor the nervously exciting effect of tea, while it is beneficial to the whole nervous and circulating system.

THE TEST.—The proof of the efficacy and healthful effect of Mr. Evans' Plant in preference to tea or coffee. Let a nervous or dyspeptic patient use two or three cups of strong tea upon retiring to rest, and the effect will be night-mare, disturbed sleep, and other violent symptoms of indigestion, &c. If weak and sickly persons use two or three cups of strong coffee at night, their rest will be disturbed, and a fever will ensue.

THE PROOF.—Let the most debilitated, dyspeptic, and nervous patients use two, three, or more cups of a very strong infusion of Mr. Evan's Piqua Plant, and in the morning they will awake refreshed with their repose. It is highly recommended by physicians to invalids and children, as a most invigorating and pleasant beverage.

The aged, the nervous, and the infirm, and those who are suffering from asthma, or any disease arising from weakness of the lungs or of the digestive organs, will find great benefit by discontinuing the use of tea, and substituting Mr. Evans's Plant, which is a nutritious and invaluable beverage.

The following are reasons why Mr. Evans's Plant is superior to tea, viz.:—

1st. Because it is beneficial to health.
2d. It does not injure the nerves.
3d. It does not prevent sleep.
4th. Children may use it with advantage to health.
5th. It is strengthening and nutritious.
6th. A quarter of a pound will go as far as three quarters of a pound of the best gunpowder tea.
7th. It is recommended by physicians, and tea is disapproved by them. It is patronized by the clergy and nobility.

TESTIMONIALS.

FROM DR. KILROY.

"MR. EVANS,—SIR,—I have tried the effect of your Plant personally, and have no hesitation in subscribing myself satisfied with the decided benefit on the nervous and circulating systems, I can recommend it strongly to those who suffer from loss of sleep and indigestion, possessing none of the deleterious properties of tea.

"JOHN KILROY, M.R.C.S.S.,
"6, Salisbury Street, Strand."

"It is a highly useful beverage at supper in lieu of pernicious stimulating drinks, as it promotes rest with composure; it produces less acidity than any other beverage. I use it, and commend it to all my dyspeptic patients.

"DR. BRYANT, 50, Edgware Road."

"MY DEAR SIR,—After giving your Plant a fair trial, I with pleasure offer my most favourable testimony as to its beneficial effects on the system generally; it forms an agreeable beverage, and I would strongly recommend its use to persons labouring under nervous depression, or derangement of the digestive organs.

"To Mr. EVANS. "J. RENNIE,
"Member of the Royal College, Surgeon, &c. &c."

From Mrs. DYBALL, Magdalen Street, Norwich.

"SIR,—I beg leave to submit the following statement for your inspection. I have for some time past been suffering from nervous debility, want of appetite, and could scarcely get any sleep. Hearing of your very excellent beverage, the Patent Piqua Plant, I was led to try it, and am now happy to say it has, in my case, promoted strength, a good appetite, refreshing sleep, and a determination on my part to use nothing else in future. I shall be most happy to state to any person you may think fit to refer to me.

"I am, Sir, yours respectfully,
"S. F. DYBALL."

The original letters may be seen at Mr. Evans's Office—1, Savoy Street, Strand, London, with numerous other testimonials from undoubted authorities.—None is genuine unless each package bears the signature of WM. EVANS.

The amount in economy derived from the use of Mr. Evans's Plant, compared with the respective teas, is as follows:

Suppose a family using one lb. of congou tea per week, worth 4s. per lb., substitutes Mr. Evans's Plant, at 3s. 6d. per lb., which, requiring but one-third the quantity to make the infusion of equal strength, the saving would be, per week, 2s. 10s., and the cost to the family 14d, instead of 4s.: for one-third of a lb. of Mr. Evans's Plant will go as far as one lb. of the congou tea.

If a family use one lb. per week of souchong tea, at 5s. per lb., the saving would be, by using the Plant, 3s. 10d. per week, and the expense to to the family but 14d.

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Medical Board of Bengal.
Sir Phillip Crampton.
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Dr. Cookworthy, Physician to Plymouth Dispensary.
Dr. Watson, Physician to Middlesex Hospital, London.
J. G. Perry, Surgeon, Foundling Hospital, London.
Dr. Rae, Royal Hospital, Chatham.
J. R. Martin, Esq., (late of Calcutta,) Grosvenor-street, London.
Dr. Jackson, late Apothecary-General, Bengal.
Dr. Graves, Meath Hospital, Dublin.
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London: Printed and Published by JAMES ANGERSTEIN CARFRAE, 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex.—July 1, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 198. Vol. VIII. LONDON, SATURDAY, JULY 8, 1843. PRICE FOURPENCE. STAMPED EDITION 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper, and forwarded with the Magazines.—Orders for the Stamped Edition (10s. 10d. per Half-year, Post-free in advance,) are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE III.

THEOREM THE THIRTEENTH.

The double faculty of inspiration and expiration, of which we have seen that each organised cell is naturally possessed, is the primary cause of the circulation of the liquids which it contains, as also of that of the surrounding fluids.—Let us admit that a pore of the cell absorbs and inspires; that it appropriates and assimilates to itself a molecule of the surrounding liquid; the succeeding molecule will necessarily come to supply the place of the absorbed one; and others, in successive order, will take the place of the latter; hence, the movement of the whole mass of liquid. But if the inspiration be continuous, and the mass of liquid be contained in a limited cavity, then a circulation is established, as long as this absorption or inspiration goes on. By circulation, I mean a circular movement of the liquid; and this circular movement takes place in the liquid, whether it be contained in a single cavity, or in the interior of a system of canals and tubes. The same result will ensue as a consequence of the aspiration of gas or of liquid; impulsion, in fact, produces, upon a mass of liquid, the same effect as displacement. In the first case, it moves by virtue of the force which is communicated to it; in the second, in consequence of the power of gravitation, by which the equilibrium of liquids is produced. Now, aspiration, by the external surface of the cell, is attended by an expiration internally upon the liquid of the elaborating cell. This interior liquid must then take a circular movement, under the impulse of the liquid molecule which the cell has drawn, by inspiration, from the surrounding fluid, and which it has introduced into its proper cavity. But, as the cell cannot make an inspiration without a corresponding expiration, this latter act of expiration will also add, by its impulse, to the movement originally given to the surrounding liquid by the displacement occasioned by aspiration, and will thus increase the activity of the external circulation.

First Corollary.—Let us now combine together the two preceding theorems. Let us suppose two cells, plunged into a liquid, and endowed with the faculty of aspiration, and consequently with that of expiration. These two cells, if they aspire with any degree of energy, will become approached towards each other by this action. The liquid will be forced back by their incessant approximation; the two opposite walls will be brought into contact, and an intimate adherence be formed between them. If a third cell be added, aspiring in the same manner, though differently directed to the two preceding, it will become approximated to them by the same mechanism; and on their contact taking place, there will be adhesion by three points of surface, and, consequently, a canal will be formed between the three cells. Suppose a new series of cells superadded, aspiring and becoming agglutinated with the former, we shall then have formed an aggregate of cells with a net-work of lacunæ which, in time, and by the approximation of the points of contact, will become converted into a net-work of vascular and cylindrical communications, with elastic walls. Thus is the vascular circulation established,—a circulation conveying the liquids proper for aspiration, and which carries off the liquids expired by each cell,—liquids which are unfitted for further use. Let me here repeat (see first lecture), that the cells arise upon the walls of a maternal cell, and we shall understand how, being thus in proximity one with another, they must eventually, by their action of inspiration, be brought into immediate contact.

Second Corollary.—We must suppose that there exist some tissues which inspire gases or liquids, more actively than others, (the aspiration of gases gives to the circulation a greater energy.) The tissues thus organised take the name of *respiratory tissues*; it is here that the circulation seems to commence, for it is here that it acquires its activity and reanimation. In man, as in all breathing animals, this tissue is in the lungs; the lungs are the beginning of the circulation; the heart is, so to speak, but its resting-place. We meet with animals without a heart, but we never find living beings without a respiratory organ, whether *branchiæ* or lungs.

Third Corollary.—Every cell ceasing its functions by the drying up of its walls, the aspiration of gases by the cells can take place only through the medium of moisture. The cell can aspire but liquids: it aspires gases only in the vehicle of water. Hence it follows that the branchiæ are external to the body in the greater number of aquatic animals; while the lungs, deeply seated in breathing animals, communicate with the external air, but through a long canal, which is incessantly lubricated by the salivary secretion of various glands.

Fourth Corollary.—There must exist different centres of circulation in a living being. Such is a necessary consequence of the idea, that we all proceed from the generating development of cells. Each organ has then a circulation which is proper to it, and the products of which it communicates to the contiguous organs, by the vehicle of the surrounding circulation. The circulation of the blood in man, is but the common circulation between the different centres of the individual circulations,—circulations which assume the various distinctive colours of their especial elaboration,—yellow, blue, green, black or white, according to the elaborating organs. The truth of this corollary may be plainly demonstrated by the aid of the microscope. The circulation is black in the choroid coat and the ciliary processes of the eye, yellow in the adipose tissue of man, of a reddish-white in the elementary tissues of the kidneys and other glands, changeable in the iris, black, grey, or red in the tissue of the hair, of a milky whiteness in the aponeuroses, the tendons, the internal tunic of the veins and of the arteries, in the brain, the substance of the nerves, &c. All these individual circulations are supplied and fed from the general circulation, by means of the hilum of their organ, which inspires that which is suitable to its assimilation, and returns, by expiration, into the circulatory system, its superfluity, or that which the organ cannot assimilate.

Fifth Corollary.—Chemical analysis shows us that the vesicles vary in their elementary composition, according to the nature of the products which they elaborate; we must then admit the reverse of this proposition, namely, that the products of elaboration of the elementary vesicle vary in nature, according to the proportions of the elements which enter into the composition of its parietes. Now, the wall of every vesicle is resolved by analysis, into carbon, water, and salts: it suffices then, to produce a variation in the products of elaboration of an organised cell or vesicle, that there should be a variation in the proportions of carbon, of oxygen and of hydrogen, or a difference in the nature of the bases and of the salts, which would thus bring about a revolution of elaboration in the vesicle. The products of a newly-formed vesicle are, consequently, diametrically opposed to those of a vesicle of old formation; the products of a ligneous vesicle have scarcely anything in common with those of an albuminous vesicle. Their proportions may be uniform, their development equal; but their combination being in different proportions, a difference is produced in the results of their elaboration. But the vesicle elaborates in its interior alone the gases and liquids which it aspires from the surrounding medium. This medium is the same for all the cells of different elaboration. Each cell, then, performs in this medium a species of choice, it aspires only that which it is able to elaborate, or else expires that which it cannot assimilate to itself. The cells, then, have different modes of aspiring and of performing this choice—a difference in aspiration which results from the difference in the proportions of water, of carbon, and of bases which enter into the composition of the respiring wall or surface. We may readily conceive that one wall will give passage to molecules which another would condense upon its outer surface, if we bear in mind the difference of molecular interstices or pores which two cells of different combination necessarily present, and in one of which the component molecule shall be formed of one atom of carbon and of four atoms of water, while in the other the atom of carbon shall be combined with but three atoms of water. We must, then, consider the numerous ways in which these interstices vary in diameter, in form, and consequently in their power of aspiring and of making their choice, where the central atom of carbon is surrounded by six, eight, or twelve atoms of water. These modifications may, with some elements, be carried *ad infinitum*.

THEOREM THE FOURTEENTH.

Every fluid stagnating in a cell which has become inert, ferments in a manner contrary to the laws of vitality; it is no longer a nutritive secretion, it is a poison.—The truth of this proposition results from the truth of its opposite; viz., that every liquid elaborated by a cell endowed with vitality, is a liquid which contributes in its turn to the general life. Now, it is not the nature of any organic liquid to preserve long its original constitution. Every liquid absorbs oxygen, and the nutritive secretions more than all others. Every vital and nutritive secretion, when exposed to the contact of air, undergoes a fermentation, of a normal character, if it take place under normal circumstances; but of an abnormal character, if the circumstances are changed, as also the conditions of the medium: a fermentation which is a modification in the form and in the nature of the liquid, inasmuch as it is an augmentation of its substance at the expense of the air—a fermentation which is a decomposition, if it is not a development. The blood which forms our flesh in the current of the circulation, becomes changed into a putrid substance after its escape from the vein; it becomes pus, if extravasated beneath the integuments or into the deeper-seated tissues; for, beneath the integuments, the air arrives at it by means of aspiration through an organised tissue.

THEOREM THE FIFTEENTH.

Disorganisation of the elementary vesicle of an organic tissue may be the germ of destruction to the surrounding vesicles, a destruction capable of involving gradually the organs of another order of functions.—We have established (see our last lecture) that the

vesicle which is organised and endowed with vitality, has the property of absorbing both the liquids and gases which are suitable to its mode of assimilation, as well as those which are opposed to it, and which destroy its life. On the other hand, we have said that, as soon as a cell ceases to elaborate, it becomes disorganised, under the influence of its fluids, which are decomposed, and tend towards putrefaction, from the moment that it ceases to assimilate. The products of fermentation, especially those of putrid fermentation, become poisons when absorbed. Let us then admit that a single cell of the human body becomes disorganised, in a medium incapable of intercepting the communication of the products; it is evident that these products of its decomposition when absorbed by the neighbouring cell, must poison this latter, and that the products of this poisoning will be absorbed by the following cell, and so on, until the whole individual organ has become invaded. But this organ itself is a cell more complicated than its elementary portions, only in its relation to the general organ or individual. This organ will communicate its disorganising products to its fellow organs, and thus terminate by poisoning the entire individual,—a poisoning which may take place gradually by simple contact, and in which the vehicle of the circulation does not enter. But, in this case, the poisoning by contagion will be less rapid. Consequently, the germ of death may in the giant be found in the smallest of his atoms; a drop of liquid, a puff of gas of the most subtile character, may overthrow a colossus.

First Corollary.—The cells may be divided, as well as individuals, into two distinct categories, those which are commencing, and those which have finished their career; those which are in the full power of their elaboration, and those which are tending towards decay. The former are invariably internal, in reference to the latter, which they push outwards. The parents become exhausted by their generations. Witness the cochineal insects, which bring forth their young where they fasten themselves upon the bark of the living vegetables; their gestation is a slow and gradual exhaustion; their small ones enlarge within their belly, which becomes inflated and progressively distended under the effort, until finally, the whole body serves the purpose of an epidermis to the new generation; this viviparous accouchement may thus be called a posthumous birth. Such is a literal image of the development of our organs, of the *spiro-vesicular* development. The decayed organs, evidently, do not absorb, like those organs which are full of life and power; they are not such active vehicles of contagion as the latter. You may handle with impunity arsenious acid, mercurial salts, mineral and organic poisons; the epidermis of the hand, especially of hard hands, the epidermis,—a worn-out organ—is placed there, to protect from contagion the sub-jacent tissues, tissues endowed with vitality. In the same way the dermis, less decayed, and of more recent formation than the epidermis, though more advanced in age than the tissues placed at a greater depth, the dermis will transmit contagion less quickly than the more intimate tissues; so also, the cavity of the mouth, being in more prolonged and more frequent contact with the air, will absorb poison and infection much less readily than the anal, and especially the vaginal openings; this latter, in its power of aspiration, equals the surface of the stomach, and even surpasses it in sensibility.

Second Corollary.—An organ progresses so much more speedily towards decay, as it is in more immediate contact with the atmospheric air. On making an incision into the deeper-seated tissues of the trunk of a tree, or of an animal body, the liquid of the incised cells escapes, and the superficial layer of the sound cells gradually exhausts itself by transpiring its liquid, becomes dried up by this draining, and is converted into another bark or epidermis, which, in a short time, assumes all the characters of this kind of normal and protective organ to the elaborating tissues. The more a cell is in contact with the air, the more it elaborates; and the more it elaborates, the quicker does it run through the circle affixed to its organisation,—the more does its hasten towards its decay.

THEOREM THE SIXTEENTH.

An organized cell has a scale of development which it cannot exceed. As soon as it has reached these limits, it ceases to carry on its functions,—it dies. We have seen, that by an incessant progression, and under the influence of a certain temperature, gases become associated into liquids, and liquids into tissues, which become gradually more rigid, hard, ligneous, and osseous, by combining with a larger proportion of earthy and azotized bases. We have also established, that the development takes place from centre towards circumference—that the younger tissues push outwards the tissues which have engendered them, and which become but the bark, or epidermis, which clothe and protect them, which have ceased to elaborate, and which subsequently fall off in scales. Now, the older a tissue becomes, and consequently the more external, the richer is it in earthy bases, and the poorer in organizing substances: the more a tissue approaches this state of decay, the less does it enjoy the power of organization, which distinguished it in its earlier state,—the less does it bring to the sum of continuous development. Development having then reached its summit, must go on diminishing in a constant gradation, correspondent to the proportions which the cell had acquired by its special organization. Figure to yourself the maternal vesicle elaborating, and consequently engendering its species, by the internal development of the globules composing its walls. At a certain period, being pushed outward by its new generation, it becomes but the epidermis protecting the contained parts, and transmitting to them, through its permeability, the gases and liquids necessary to their elaboration. The first generation begets others in its turn, and is thus pushed outwards, sooner or later, by the second generation which emanates from its walls: it, in its turn, forms but a second cutaneous layer—a lining to the primitive epidermis, thus altering, to a great extent, its permeability, and consequently diminishing the quantity of gases and of organizing liquids absorbed, as well as of organical caloric, diminishing in equal degrees the power of assimilation, and the vitality of the subsequent cellular generations. Now, every diminution has an end; every development, also, has its limits, which vary in proportion to the medium, that is to say, the mass of materials in which the elaborating organ is placed.

Corollary.—The individual being but a general organ,—an harmonious assemblage of organs, and each organ being but an assemblage of cells, which are the elementary organs of its tissue, we shall find that those laws or principles which we have already established in respect to the cell are, in like manner, equally applicable to the individual.

THEOREM THE SEVENTEENTH.

The organised cell continues its development without interruption and without modification, so long as the conditions of the surrounding medium remain unchanged.—Development is a law, and not a caprice. If it be one of the laws of nature that an atom of oxygen shall combine, in an organised vesicle, with a certain number of atoms of hydrogen and of carbon, under the influence of the rays of light and of heat, their combination will necessarily take place, immediately that all these elements are brought together. If this combination do not take place, we shall find some change in the properties of the bodies themselves. To produce a disturbance in the functions of an organ, it is then necessary either that the medium, in which it imbibes its elements, be modified, or that some obstacle intercept their communication, or else that some destructive agent disorganise the vesicle, and appropriate to itself the organising principles. An organ does not become deranged of its own accord.

First Corollary.—If a modification were induced in our atmospheric constitution, then would a newly organised world succeed to the present one, the size of the animal would be increased or diminished; in fact, the imagination falters beneath the consequences which might be drawn from this simple induction.

Second Corollary.—Life implies development; death the attainment, whether naturally or artificially, of the term of development. Development is the elaboration of gases into liquids, and of liquids into tissues, by the action of the organised vesicle. Health is the regular exercise of this development—disease its disturbance—death its cessation. The diversity of age is but an alteration in the direction of development. Under this view, the old man elaborates as well as the adult; he is daily undergoing a loss, as well as a reparation. His tissues become daily enriched with bases, and tend towards ossification. Every thing elaborates in him; nothing reposes.

Final Corollary.—1st. A normal organ, placed in normal conditions, can only elaborate in a normal manner; it cannot become deranged under these conditions, it tends only to become old.—2nd. The sound organ does not engender its disease, it receives it from without; it does not become deranged, nor does it die before its term, except by accident.—3rd. Disease is not an imaginary thing; it is a disturbance in the functions of an organ, an obstacle which opposes itself to the law of assimilation and of development, an effect of which the active cause is external to the organ, which, in this case, is purely passive.—4th. If we could appreciate the nature and the number of these external causes of internal disturbance, we should thereby possess the power of removing disease, and of maintaining or restoring health; and medicine would thus escape from the domain of empiricism and conjectural hypothesis, to re-enter the list of true sciences of observation.

We shall devote ourselves to the study of these causes in the ensuing lectures.

ON COLIC AND ITS TREATMENT.

By C. J. B. WILLIAMS, M.D., F.R.S.

The symptoms of colic are severe pain in the abdomen, with constipation, but unattended by inflammation. There is sometimes a severe pain of a griping, twisting character—a feeling as if the abdomen would burst with the severity of the pain in the hypogastric, umbilical, iliac, or hypochondriac regions: and this is relieved by firm and equal pressure. The abdomen feels tense and tympanitic, and in various parts hard and knotty, as if some points were very much distended, whilst others are comparatively contracted. Sometimes the abdominal walls are drawn in from the severity of the pain, the muscles contracting with great energy, so as to produce a pressure on the intestines, which pressure is somewhat relieving. The patient, to get relief, lies on his back, with his knees drawn up, and his arms pressed on his stomach. The pain comes on in paroxysms, worse at some periods than at others: sometimes the pain is accompanied by very severe vomiting, and the matter vomited in these cases, may be, first of all, bile, then mucus, with more or less bile in it. If the vomiting goes on, the matter thrown up sometimes becomes feculent, obviously proceeding from the intestines. This is called stercoraceous vomiting. These symptoms become important in the pathology of the disease, the peristaltic action of the intestines being inverted, so that the matters are not passed from the canal in the usual way. All this is connected with obstruction and constipation. When the disease arrives at this form, it has been called *ileus.* The pain and general symptoms come on more severely from time to time. There is no increased heat of the abdomen or body generally, as in inflammation, and in some cases, in spite of the severity of the pain, the pulse may be but little accelerated. These are important distinctions to bear in mind, in distinguishing this disease from inflammation. Every now and then, considerable temporary relief may result from the discharge of wind, which may be heard rolling about in the intestines to a great degree. Now, the most important and formidable symptom, chiefly interesting in a pathological and practical view, is the obstinate constipation, which resists common doses of aperient medicine; and many of the other symptoms may be referred to this interrupted function of the canal, causing spasmodic pain and irritation, to a very great degree, the peristaltic action failing in expelling the contents of the intestines in the usual direction.

The exciting causes of this disease are various; but the chief are irritation or paralysis of some part of the intestines. Thus, irritating ingesta of various kinds will produce attacks of colic: sour liquors, indigestible food, cucumbers, pork, shell-fish: feculent accumulations, too, give rise to attacks of colic: it may also arise from exposure to cold, which will produce spasmodic action of the intestines. Sometimes it arises from internal causes,—internal obstruction without any external cause; as, for instance, internal hernial strangulation. This may be said to produce the symptoms of colic, in the first instance, and inflammation follows. Stricture and intussusception are also among the causes of colic. Besides the causes above enumerated, mere functional disorder, or incapacity of the intestinal tube may induce colic, and this in two opposite ways: spasm of a portion of the intestine may produce it, in a manner too plain to need any explanation, and paralysis of a portion of the intestine may cause it also. Dr. Abercrombie has gone too far in attempting to show that paralysis is the only cause of colic. That spasmodic contraction of the intestinal tube can produce obstruction is quite clear, and this spasm may depend either on nervous causes alone, as increased susceptibility, or muscular irritability, or on increased vascular action. Now, enteritis causes obstinate constipation, by increasing the irritability and contractility of the muscular tube. When it is absolutely contracted, accumulation of fæces takes places to an enormous extent. The parts become distended, and, by-and-by, the tube beyond may exhibit the inverted peristaltic action, and throw the matter back again, whilst the lower parts of the canal become contracted in an extreme degree. Dr. Abercrombie has pointed out that this may not be the cause but the consequence of obstruction; that paralysis is the real cause of obstruction; that in one part of the tube, the muscular fibres having lost their contractility, irritability, or excitability, the portions of the intestines above, continue to force feculent matter downwards; and inasmuch as these fibres cannot contract on this matter, it accumulates within them, and causes an obstruction to its further passage. Dr. Abercrombie was led to the supposition that this was the case, from examining the intestines, in some cases of ileus and colic, and not finding any perceptible contraction;—a fact which consequently led him to the supposition, that paralysis was its most important cause. I believe, that in many cases, this view is the just one; but when we come to consider that colic is frequently produced by irritating causes, such as sour liquids, and the other things I have mentioned, I think it a stretch beyond what is warranted to suppose that paralysis is the only cause. In fact, we find that in various other muscular tubes, strong and permanent contraction does take place, where there is no appearance of inflammation, or without the chief signs of disease, and we find the contraction is such, that we are led to suppose that it arises from spasm. Lead-colic is, however, frequently dependant on both spasm and inflammation combined.

Another circumstance seems to point out that it is not merely weakness or paralysis, but that some spasm is present, and that is, that the parts below are often expanded to a considerable extent, containing gas only, and that gas passes from one part to the other. The worst form of obstruction seems to be that which arises from the irregular distribution of muscular power in the intestines, so that some parts are very weak, whilst others are stimulated to spasm. This is the condition presented by the intestines in the case of the lead colic. It is very well known that painters, plumbers, and others in the habit of being exposed to the action of lead, are occasionally attacked with severe forms of colic. In this form of colic there is usually constipation, which is frequently preceded for some time by a disordered state of the bowels. The symptoms exhibited are very remarkable. There is severe pain coming on, more or less, in paroxysms—a twisting about the navel, relieved by pressure in a remarkable degree. Perhaps the pain is somewhat more constant than where it proceeds from other causes. The action of the lead is to cause paralysis, more particularly of the muscles of the fore limbs, which is ultimately accompanied by a wasting of those muscles to a remarkable extent. In these cases, there is obviously, as we see from the effect on the arms, paralysis of motion, but not of sensation. Persons, so affected, have the feeling in their hands as usual. Now, it appears to me that the action of lead on the intestinal canal is much of the same kind; that paralysis is produced in some parts, accompanied by a loss of power of action, whilst sensibility is unimpaired; and those parts which become distended, suffer just as much pain with their distention, as if they had their full power of contractility. There is frequently paralysis in some parts, and spasm in others; some parts of the abdomen are distended with flatus, and tender to the touch, whilst other parts are knotty and contracted, as if drawn together, and there can be no doubt but that they are so. This is explained by the effect of irritation of the nerves. Painters' colic is often preceded by nervous symptoms; tremor, sleeplessness, and, in a few instances, even coma or delirium. Actual delirium is not at all uncommon with painters using white lead very freely, particularly where turpentine is used in great quantities. The vapour of the turpentine, which is very volatile, carries the lead along with it into the system. Many things prove, however, that lead enters the system quite as much, or more, by the intestinal canal than by inhalation. White lead, mixed with oil of turpentine, is very diffusible; it is more easily splashed about, and conveyed from the hands to the food, than is the more adhesive form of white lead mixed with linseed oil. There are sometimes, in addition to the above symptoms, various disturbances of the nervous system: the pulse is more frequent, and smaller than natural; the pain often comes and goes, as it were, in paroxysms; but after the colic is removed, there are frequently some nervous symptoms left behind—nervous symptoms referable to excessive sensibility—as, pains in the thighs, soles of the feet, and calves of the legs; there is also tenderness on pressure. In the case of the lead-colic, this sign is a very important one. There is a dark bluish line at the margin of the gums where they cover the teeth, which is quite distinct from the dark line that arises from congestion of these parts. I think it is characteristic of lead, and is formed by a sulphuret of lead being deposited in that situation. Now, colic may terminate on the removal of the obstruction (if this be the cause of all the mischief), or else it may pass on to inflammation—enteritis of a severe character. The disease may also prove fatal by exhaustion, as in the case of ileus, where a terrible diversion of the natural state of things takes place, and the patient is exhausted from the painful action of the canal; there is fainting, the pulse is thready, extremely feeble and frequent, hiccup occurs, and the patient dies in a state of exhaustion. In such cases, on examination after death, the gut has been found very much distended, and often considerably discoloured, while the part beyond is contracted, but without inflammation. In other cases, where inflammation supervenes, the pain is no longer intermitting, but constant; it is not relieved by pressure, but is rather increased by it; the pulse increases in frequency and force, heat of skin comes on, and the various symptoms of inflammation shew themselves; accumulation of fæces takes place very extensively, and may lead to ulceration. Sometimes the part will be found in a gangrenous state. You will understand that this disease (colic), in the severest form, is a very obstinate and very dangerous complaint; and it is more dangerous in proportion to the length of time it resists the action of remedies, and until the bowels are opened. Nor is your patient quite safe, even when the bowels have acted; for if the attack has been severe, the patient will be very much exhausted, or sometimes inflammation may occur, and the local effects not be removed. However, recovery is possible from the most dangerous attack. Ileus, in all its worst forms, has been recovered from. Of course, in the diagnosis of ileus, it is important to distinguish it from strangulated hernia, and it is by the absence of the symptoms of hernia that we draw the conclusion that it is colic.

I now come to the treatment. Colic in slight cases may be removed by warm stomachic purgatives, to relieve the costiveness: it is proper to exhibit aromatic purgatives and narcotics combined, for the purpose of promoting the contraction of some portions of the intestines, and to deaden the excessive sensibility of the canal generally, and the tendency to spasm which is induced. When the attack is severe, accompanied by violent pain and vomiting, it requires active measures. There may not be any inflammation present, but there is a tendency to it. In all cases, if there be any heat of skin, tenderness or hardness at the abdomen, venesection should be practised. This has the effect of relaxing the spasm, some of the more severe forms of which depend on the congested state of the intestine. Bleeding is not safe in old and weak persons, and only necessary in the severe forms of disease. The great indication is, to get the passage of the intestines free, and thus to relieve the distention. The pain tends to increase the obstruction, and if it is not relieved by blood-letting, and the bowels are not opened, you should give narcotics to relieve the pain and relax the spasm. Opium, combined with calomel, is given in large doses to deaden the increased sensibility of the intestines; this must be repeated in the course of one or two hours, and after that a brisk purgative should be administered, to carry off the accumulated matters. The medicine to be given subsequently, should be that which is most sure to operate, and which, at the same time, is least irritating; castor oil in this case is the best remedy. Croton oil is a very popular remedy, and in cases of constipation it is a very good one; it is a powerful purgative. A little creosote may be added to the croton oil to take away the sickening effect. With the first dose of calomel, a little belladonna may be combined; it is more particularly applicable to lead colic, but it may be used with equal success in common colic. The importance of belladonna is, that it does not paralyse the action of the intestines or stop the secretion of the liver, as opium is very apt to do; but, at the same time, belladonna is less powerful as a narcotic, and does not relieve the pain with anything like the certainty of opium; and for this reason, I should not recommend you to trust to it solely in cases of colic, when there is danger of a continuance of pain and irritation. It is proper to use injections to facilitate the operation of the purgatives, and the injections that answer best are turpentine and castor oil, thrown up in large quantities. Gruel I have found the best medium for the purpose of introducing the castor oil; three, four, five, or six pints may be injected. It is useful to combine laudanum with the injection, to relax the spasm. A hot bath and hot fomentations, or dry heat, are of very great use in relieving the pain, and are more important in cases of common colic than in lead colic. If no relief is derived from the measures I have described, the last resource is the tobacco injection, in the form of an infusion; a scruple of tobacco to eight ounces of water, infused for ten minutes. This should be repeated if it produce no effect, and at the same time croton oil, or colocynth, with calomel, and extract of hemlock or henbane may be given. In some cases, dashing cold water over the abdomen has succeeded after other methods have failed. In France, they use alum in the treatment of colic, given by the mouth in a dose of a scruple or half a drachm, in some mucilaginous solution, with a little opium, repeated every hour until the operation takes place. Majendie has cured 58 cases in as many days by this mode of treatment. Mild astringents are useful after an attack of colic is overcome. Avoid all sorts of irritating matters in the food, and keep the bowels free. If purgatives are necessary, they should be of the mildest kind—castor oil or rhubarb; and if these are not sufficient, colocynth, combined with belladonna, or some saline aperients are useful. Galvanism may be serviceable. The painter's colic is more frequently connected with paralysis of some parts of the canal, and increased sensibility of other parts, than the other forms of this disease; it also has a tendency to run into inflammation. The treatment is to be adapted to the symptoms which present themselves. You

have here excessive or defective contractility of the intestines and excessive sensibility, and you wish to overcome these two morbid actions together. The common practice is, to give the same remedies as in common colic—opium and the purgatives mentioned above. It is quite certain that opium counteracts the tendency of purgatives, and has the effect of locking up the secretion of the liver. It is common, after giving opium, to find relapses: purgatives should be given in combination with belladonna. I find by experience that in cases of lead colic, the best remedy is a dose of calomel, with a pretty full dose of extract of belladonna; five grains of calomel to one or two of extract of belladonna, to begin with. If the pain is severe, repeat the dose in the course of an hour or two, and then after a while evacuate the bowels with croton oil or castor oil, combined with belladonna; one drop of croton oil to half a grain of belladonna every hour or two hours, and a drop of creosote, until the bowels are free. The success is very striking under these means, and the bowels are generally opened after this practice has been followed up, and three or four doses have been given. But even when this has been accomplished and the pain relieved, it is necessary still occasionally to give purgatives guarded by belladonna, until the nerves have regained their state of quiet, and the canal resumes its natural function. Where the disease is severe, use the injection of turpentine, combined with castor oil, and I would even advise you to add the extract of belladonna. You may give alum as recommended by the French authors.

ON THE PREPARATIONS—PILULÆ HYDRARGYRI, HYDRARGYRUM.C. CRETA, & UNGUENTUM HYDRARGYRI FORT.

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My attention was directed some time ago to an article in your valuable publication (Medical Times, page 10, vol. viij.) on a new method of preparing the pilulæ hydrargyri, the merit of which is attributed to Dr. G. F. Collier. It consists of the former well known ingredients of the massa pilulæ hydrargyri, with the addition of the sesqui-oxide of iron. It is made in five minutes, and the mercury so well dispersed, that its globules were not discoverable by the microscope. It forms a smooth uniform pill, which Dr. G. F. Collier asserts, from experience, produces all the desirable effects of mercury in the usual doses, and maintains the presence of the sesqui-oxide of iron, prevents the wear and tear of the system under the effects of mercury, and the physical powers are less prostrated during its use; it is, therefore, (says he) particularly eligible for strumous, irritable, and anemic habits. The composition, as recommended by Dr. Collier, is as follows:

℞ Hydrargyri ʒij.
Sesqui-oxidi ferri ʒj.
Conf. ros. gall. ʒiij. M.

In five or ten minutes the mercury entirely disappears, so that even a microscope is scarcely able to discover it.

When the time gained, and the divisibility of the mercury, are considered, Dr. Collier's plan must be acknowledged to be an excellent one, particularly as the preparation itself is not only more effective, but attended with less unpleasant circumstances as a remedy, than the common pilulæ hydrargyri of the London Pharmacopœia. I can add my testimony to that of Dr. Collier in respect to this preparation; I find it a better formula than the one in the Pharmacopœia, and I am in the constant habit of using it. It occurred to me that a similar improvement might be effected in other mercurial preparations; with this view, I directed the hydrargyrum .c. cretâ to be made as follows:—

℞ Hydrargyri ʒiij.
Cretæ ppt. ʒiv.
Sesqui-oxidi ferri ʒi. M.

In ten minutes or quarter of an hour, the mercury entirely disappeared, and a well mixed powder formed, in which the globules of mercury could not be detected with a glass of considerable magnifying power; the same power when applied, easily detecting globules in the best made preparation of the hydrargyrum .c. creta which I could procure. This formula is well adapted to all infantile diseases, where mercury is indicated on the same ground of reasoning as that advanced by Dr. Collier, in respect to the pilulæ hydrargyri as above. On directing my attention to the unguentum hydrargyri fort, I ordered the following ingredients and proportions to be put together and well rubbed:—

℞ Hydrargyri ℥xxiv.
Adipis ℥xviij.
Sesqui-oxidi ferri ʒivss.
Sevi ℥iss. M.

In this preparation, nearly the same advantages as to time and divisibility of the mercury, were gained. As yet I have not tested this formula, but have little doubt of its efficacy; indeed, the ease with which the mercury is so intimately mixed, and the extreme minuteness of the mercurial particles, being a sufficient guarantee.. One objection, however, is the colour, and I may add its liability to stain the linen, &c.

The action of mercury on the system is mainly dependant on the divisibility of the metal, particularly in the preparations here introduced. I, therefore, look upon Dr. Collier's suggestion as valuable, and hope those of the hydrargyrum c creta, and unguentum hydrargyri fort, as here given, will meet with attention from the profession, and that their merits may be fairly tested, and the results as fairly recorded.

I have always been an advocate for very small doses of mercury, frequently repeated, particularly calomel, as may be seen by referring to my papers on that subject in *Lancet*, vol. 2, 1841. page 751. In all cases where mercury is indicated, the less mercury introduced into the system the better; it is, therefore, desirable to produce the effect required, with the least possible quantity, in order that the physical powers may not be prostrated too much. On this ground, the preparations here recommended, are particularly eligible, the addition of the susqui-oxide of iron preventing the system from suffering too much from the effects of the mercury, whilst its presence reduces the mercury to the smallest conceivable particles, increasing its powers, and effecting the required object with less consumption of the material.

OBSERVATIONS ON POTATO-STARCH.

By JONATHAN PEREIRA, M.D., F.R.S., Honorary Member of the Pharmaceutical Society.

I venture to call the attention of the Members of the Pharmaceutical Society to some of the properties and uses of potato-starch. I do so because I find, that while this fecula is extensively used for adulterating dietetical and pharmaceutical substances, and is sold in the shops under various names, many intelligent chemists and druggists are unacquainted with it, and,therefore, are unable to recognize it when met with.

At some of the Italian warehouses in London it is sold under the name of potato-flour; being used by cooks in the preparation of souffles, and sometimes for thickening gravies, sauces, &c., on account of its being cheap, tasteless, and soluble.

At Mr. Butler's, in Covent Garden market, it is sold in tin canisters, under the name of English arrow-root, and is used as a farinaceous food for infants and invalids, as well as for the preparation of puddings.

Bright's nutritious farina is a carefully prepared potato-starch, very slightly coloured and aromatized. It is used for the same purposes as the preparation last referred to; it makes very agreeable puddings.

The powder sold as the Prince of Wales' food, prepared by the Patent Farina Company, is potato-starch.

In High Holborn there is an establishment professing to sell Indian-corn-starch. On examination, I find that the substance sold under this name is potato-starch, to which a blue tinge has been communicated, probably by indigo. The naked eye is sufficient to recognize it. By the microscope, the shape and size of the grains, which are very different to those of the real fecula of maize or Indian corn, readily distinguish it as potato-starch. This fact I pointed out to Prof. Brande, who, having satisfied himself of its accuracy, mentioned it in a lecture at the second evening meeting of the Royal Institution this year.

The powder sold as Anderson's soluble starch, is identical with the so-called Indian corn-starch; in other words, it is coloured potato-starch.

Bright's universal sanative breakfast beverage is a mixture of potato-starch and chocolate. To the latter substance it owes its colour, odour, and flavour. When prepared for use, with either water or milk, it forms a thickish liquid.

I may here observe, that chocolate is very frequently admixed with farinaceous substances, which give it the property of thickening either water or milk; and though some persons may think this a good quality of chocolate, it is usually considered as a sign of adulteration.

Potato-starch is sometimes used for adulterating other substances. Thus it is stated to be frequently mixed with West Indian arrow-root; but I have never met with this sophistication.

An imitation sago is sometimes prepared with it. Two samples of this kind I have placed on the table of the Society. Both consist of white granules—much whiter than the ordinary pearl-sago. But I find that genuine pearl-sago may be rendered perfectly white by a solution of chloride of lime; and I have been informed that some of the wholesale dealers are in the habit of getting it bleached. Hence, therefore, the whiteness of sago is no criterion of its being adulterated. Of the two samples of potato-sago, now on the table of the Society, one was sent from Paris by Professor Guibourt, who informs me, that it was manufactured in the neighbourhood of that city. The grains of this specimen are much larger than those of pearl-sago; moreover, they are regular and perfectly white. The other variety of pearl-sago I purchased in this country. By the naked eye it is undistinguishable from genuine pearl-sago, except in being whiter than the latter usually is.

The great similarity which exists between potato-starch and *tous les mois*, leads me to suspect that the former is sometimes substituted for the latter by dealers.

Potato-starch is extensively used in this country in the manufacture of potato-sugar, which is employed by fraudulent grocers for mixing with the common brown cane-sugar of the shops. On a future occasion I propose to lay before the Pharmaceutical Society some remarks on this substance.

The substance called dextrine is usually procured from potato-starch. It is a gummy substance, having exactly the same composition as starch, and is soluble in both cold and hot water. It might with great propriety be termed starch-gum, but it has been called dextrine on account of its solution possessing the property of effecting the right-handed rotation of the plane of polarization of a ray of light. Dextrine is prepared either by torrifying potato-starch, or by the action of heat aided by a minute portion of nitric acid. The latter method yields the most soluble and least coloured product. In the process of panification, a portion of wheat-starch is converted into dextrine (torrified or gummy starch); of which, according to Vogel, wheat-bread contains about 18 per cent. In the process of brewing, the starch of the malt is converted into dextrine and sugar by the action of diastase. Dextrine, in the form of a syrupy liquor obtained by means of diastase, is employed, in Paris, in the preparation of some alimentary substances; as for sweetening and thickening tisanes, and for the manufacture of the *pains de luxe*, or dextrine bread. Pulverulent dextrine, of which a sample is placed on the table of the Pharmaceutical Society, is used, as a substitute for gum, in calico-printing, and for a variety of other useful purposes. Bandages for fractures are sometimes impregnated with a solution of it. When dry they maintain, in a proper position, the fractured limb on which they are moulded.

Hitherto I have said nothing as to the mode of detecting potato-starch, I now proceed to offer a few remarks on this point.

It may be readily distinguished by the naked eye of an experienced person from all other commercial feculas, *tous les mois* alone excepted. It presents a remarkable glistening, satiny, pearly, or sparkling appearance, somewhat like that of a number of minutely divided globules of mercury. Though it is difficult to convey an accurate and precise idea of this property by words, yet it is one which is instantly recognised when a sample of this starch is attentively examined. It arises from the large size of the amylaceous grains. Moreover, potato-starch wants that dull or dead white appearance presented by West Indian arrow-root. It gives the idea of the particles being slightly translucent.

In the large size and slight translucency of its grains, *tous les mois* agrees with potato-starch; indeed, they are somewhat larger than those of the latter starch. Hence, therefore, the naked eye may confound these two feculas.

The microscope is the most important agent in distinguishing the different starches from each other; and by it we can readily detect potato-starch. We recognise it by the size, shape, and structure of its grains. Though the size varies somewhat, yet on the average it exceeds that of other commercial starches, always excepting *tous les mois*, whose grains, as I have already stated, are rather larger. I have, however, occasionally met with samples of potato-starch, whose grains nearly equalled in size those of *tous les mois*. The actual size of the grains varies from 1-600th to 1-30th of a line in diameter. The shape of small (or youngest?) grains of potato-starch is circular or globular: but that of the larger ones is elliptical, oblong, ovate, or obtusely triangular. Perhaps, we may assume that the normal form of the fully developed particles is ovate. The structure of the grains is the next point deserving of our attention. When examined by a polarizing microscope, we observe, by the black cross which they present, that they possess a depolarizing or doubly refracting structure, which is to be regarded as an indication of their consisting of a structure unequally dense. By the common microscope we discover, on some part of the surface of the grain, one hilum, or, in some cases, two hila—one at either end, or two at the same end. The hilum is a circular hole, which was formerly thought to be a kind of umbilicus, by which, according to some writers, the starch-grain was originally attached to the parent vesicle in which it was developed. It is now regarded as the circular section of the tube or passage by which the amylaceous substance is introduced into the interior of the starch grain. On large and old grains of starch we observe a number of cracks which commence at the hilum.

On the surface of the grains is a series of curved lines, forming a system of either concentric or excentric rings or zones, which surround the hilum. They are similar to the curved lines observed on bivalved shells, as the mussel, and which indicate the terminations of the successive layers of which these shells are composed. The grains of every kind of starch, which I have hitherto examined, present a hilum and some traces of rings; but in the smaller grained starches, as rice-starch and the Portland arrow-root (starch of arum maculatum) they are very imperfectly perceived. *Tous les mois* and potato-starch, probably on account of the size of their grains, show these rings in the most distinct manner.

The starch grains are composed of a series of juxta-posed concentric layers, which may be compared to the laminæ of an onion. Of these layers, the innermost are the most recently formed. The composition of all of them is the same, but their cohesion is different, the inner or younger ones being less cohesive, and, therefore, more readily soluble than the outer or older ones. The rings or rugæ so distinctly perceived on grains of potato-starch, depend on the concentric layers.

I am acquainted with no absolute chemical test by which potato-starch can be certainly distinguished from other starches. All the amylaceous substances possess certain chemical characters in common, one of the most remarkable and striking of which is that of forming with iodine a blue compound. But these characters are possessed in unequal degrees by different starches, and thus the chemical peculiarities of potato-starch are rather differences in degree than absolute and positive distinctions. Its greater solubility in boiling water serves to distinguish it from wheat-starch, and hence it is frequently called, in contradistinction to the latter substances, soluble starch.

How then, it may be asked, is it that potatoes by boiling do not yield a mucilage of starch? The answer is, that the starch grains are contained in vesicles which compose the cellular tissue of the potato, and that the membrane of which the vesicle is composed, is not soluble in water. Moreover, it is to be remembered, that these vesicles contain an albuminous liquor in which the starch grains are immersed, and that by heat the albumen of this fluid is coagulated, and thus probably the starch grains become enveloped by a thin film of coagulated albumen, which is insoluble in water.

The greater facility with which potato-starch gelatinizes when rubbed in a mortar with a mixture of equal parts of commercial hydrochloric acid and water, has been recently suggested as a means of detecting it when mixed with rice-flour The strong smell of formic acid emitted by it, when rubbed with hydrochloric acid, has also been proposed to characterize it.

Commercial potato starch contains about 18 per cent. of hygrometric water.

Potato-starch is manufactured in this country, and is also extensively imported from Normandy and Guernsey. A few months since I visited a large manufactory of it at Stratford, in Essex, where it was at that time made from that variety of the potato, called Shaw's, and which I was informed gave the largest product. After being washed in a large tub, by an agitator moved by steam-power, the potatoes were ground to a pulp, which was conveyed, along with water, into a large sieve, in which a number of brushes were kept revolving, which brushed the starch through the sides of the sieve. The liquor, holding the starch in suspension, was conveyed into backs, where the fecula was allowed to deposit.

The pulp, thus deprived of its starch, was removed by a conveyance called a Jacob's ladder, from the sieve into a yard where I observed extensive heaps of it undergoing decomposition and I was informed that hitherto it had not been applied to any useful purpose. It occurred to me that it would serve as an excellent manure, especially for lands on which potatoes were grown, since it would supply the salts necessary for the growth of these plants. I am ignorant whether any trial of it has been made.

Whether starch can be extracted from potatoes by the action of a weak solution of caustic alkali (soda) I know not; but it would appear, from an observation in Mr. Orlando Jones' specification of his patent for the manufacture of rice-starch, by means of caustic alkaline solutions, that he cannot, for he says, that he has not yet found that his "invention can be applied with advantage in the manufacture of starch from potatoes.

The quantity of starch obtained from potatoes is subject to considerable variation, as the following table shows:—

QUANTITY OF STARCH OBTAINED FROM POTATOES.

100 *Parts.*	*Quan. of Starch.*	*Authority.*
Kidney Potato..........	28 to 32	Dr. Pearson.
Apple Potato	18 to 20	Sir H. Davy.
Potato, *var.* Shaw	18.8	Vauquelin.
———— Champion..	15.9	ditto.
———— Chair rouge	12.2	ditto.
———— L'Orpeline	24.4	ditto.

In manufactories the maximum quantity of starch obtained rarely exceeds eighteen per cent.; and it deserves especial notice. that frosted potatoes yield as much fecula as those which are unfrosted.—*Pharmaceutical Journal.*

HEMIPLEGIA FROM LIGATURE OF THE COMMON CAROTID.—M. Sedillor applied a ligature to the common carotid on account of hæmorrhage from a wound behind the right ramus of the lower jaw. The operation was followed by hemiplegia of the left side of the body, and of the right side of the face, with some disorder of the intelligence. The man died in nine days.

MISCELLANEOUS NOTICES.

1. *Acupuncture in Neuralgia.*—M. Lallemand of Montpellier has for many years been in the habit of using acupuncture in cases of *genuine* neuralgia with very decided benefit: against rheumatic pains, he says, it is quite inefficacious. We must, therefore, be careful to discriminate the cases for its employment; otherwise we shall certainly be disappointed. If the pain be limited to the *trajet* of the nerves, we may with tolerable confidence promise relief, if not a complete cure, of the suffering. M. Lallemand relates many cases: one we shall briefly notice. A man had for six months been afflicted with most severe pain along the whole course of the sciatic nerve; five needles were inserted along its tract, and left in for three hours. The application was repeated, at intervals of one or two days, four successive times; and the man was then completely cured.

2. *Importance of Veterinary Medicine.*—At the recent annual meeting at Strasbourg of the Scientific Association of France, M. Falk read a very sensible paper with the view of shewing the importance of medical men making themselves acquainted with veterinary medicine. The utter neglect of this study is certainly to be regretted, as some valuable hints for the treatment of diseases in the human subject might be derived from what may be called Comparative Pathology. Every one in the present day recognises the importance of a knowledge of the anatomy of the lower animals;—why not then of their diseases also? The suggestion of M. Falk was well received by the Association.

3. *French Gratitude to Medical Men.*—We observe by one of the Paris Journals that the names of Percy, Desgenettes, and Larrey have been recently engraved on the famous Arc de Triomphe at the Barriere de l'Etoile.—In some respects certainly, medical men occupy a higher position in society in France than in this country. For example, who ever heard of a doctor becoming a Baron, or peer of the realm with us? and yet every one knows that Portal, Dupuytren, and Cuvier occupied that dignified rank in the Parliament of France; and where is the nobleman of Germany that might not be proud to be associated with a Baron Humboldt? True, the circumstance of a French peerage being merely personal, and not hereditary, makes a very material difference in the case; but then, why should there not be a certain number at least—we are no friends to an elective aristocracy, as a general question—of the most eminent men in the various departments of science being admitted to the highest honours of the state, without necessarily entailing upon their families the expensive title which they bore themselves?—By a recent royal ordonnance, M. Louis has been made an officer of the Legion of Honour, and M. Leuret a chevalier of the same Order.—Again, MM. Andral and Rayer—certainly two of the most distinguished names in French medicine of the present age—have been elected members of the Institute. "The selection of such men," says one of the Paris Journals, "shews very emphatically that this illustrious body looks as much to the scientific character as to the practical eminence of its candidates; in a word, that it wants not so much the mere skilful physician as the enlightened philosopher in its ranks."

4. *Treatment of Gonorrhœa.*—"There are two opposite methods of treatment," says M. Vidal (de Cassis), "which I deem equally injurious; that which precipitates the issue (qui brusque le denouement) of the case, on the one hand, and that which awaits it with an almost complete inaction on the other. Both of these methods are apt to favour the extension, the displacement, or the chronicity of the disease. It is certainly remarkable that, in almost all the cases of nephritis supervening upon gonorrhœa which have occurred in my experience, the patients have taken the potion of Chopart, or some other resinous stimulating diuretic, more or less freely, from the commencement of the attack. Inflammation of the neck of the bladder, is not unfrequent after such treatment. The same result is apt to occur when little or nothing is done to check the urethral discharge,

The proper line of treatment, therefore, seems to be neither to try to stop the discharge suddenly, nor allow it to take its own course, and leave it to Nature's efforts to remove." (This remark is perfectly just; much mischief might be avoided by acting on M. Vidal's precept.)

5. *Anecdote of Decandolle.*—One day La Place being with M. Cretet, then minister of the interior, expressed his regret to see Decandolle, the ornament of French botany, sent as professor to Montpelier, as it was the intention of the Institute to have appointed him one of their members. "Your Institute! your Institute!" exclaimed the minister. "I often wish that I could send a cannon-ball among you, and scatter the members over the whole of France. Is it not a lamentable thing to see all the light concentrated in Paris, and the Provinces in utter ignorance?"

6. *Poverty of Medical men: how to eke out a livelihood.*—"One of the most certain signs, (says a writer in the French Medical Gazette), of the 'decadence' of a profession, is the necessity which many of its members experience, to seek for supplementary resources. Medicine is a most noble profession, but in the present day it is certainly one of the worst trades (industries) going. It is all very well to talk of dignity and high feelings; let it be remembered that a doctor has a stomach as well as a heart to attend to. In Paris alone, there are not fewer than 2,000 medical men, and it may be readily supposed that a great number of them scarcely ever get a fee. How then are they to live, until practice comes? by turning their talents, whatever these may be, to the best account. The other day, I called on a confrere, whose circumstances I knew to be not in a very flourishing condition, I found him busily engaged in painting a portrait; he said that he had sold several of late. But what is your object? said I—'renforcer le metier,' was his answer. If a patient called, he put down his palette, doffed his blouse, slipped on his black coat, and with a grave and becomingly professional countenance went to his consultation-room; no sooner was the interview over, than he returned to his studio, resumed his working dress, and set to his painting again with all the cheerfulness of a brave heart. 'I could not help saying, Apollo is god of the arts as well as of medicine.'—"Several young medical men have exerted themselves with success in the way of 'inventions industrielles;' for example, in the manufacture of portable liquid gas, in the construction of a night-telegraph, in preserving timber for ship-building, &c.—"The lamp C——, we owe to the ingenuity of an intelligent physician who is practising in the suburbs, and who thus diffuses both light and health around him.—Not a few imitate the example of Boerhaave, Pinel, and others, and give instructions in languages, mathematics, &c., translating, perhaps, Virgil and Horace in the morning to one set of pupils, and Hippocrates and Celsus in the evening to another. Often the wife, too, lends a helping hand 'à renforcer le metier,' either in the way of teaching, letting lodgings, or perhaps keeping a little magazine of linen or silk goods, &c.—whatever, in short, brings grist to the mill!"

7. *Compliment to English Genius.*—In a clever defence of the Montpelier School of Medicine from the reproach of having been always too metaphysical in its doctrines, a writer in the French Medical Gazette, says—"The professors, in their lectures, not unfrequently allude to the elementary principles of sound reasoning or logic, and endeavour to test the truth of any novel questions in medical science by appealing to them, on the ground that general philosophy embraces, properly speaking, a code or rule to guide us in deciding upon all matters in detail. Thus it is that our pupils will be found to study the works of the great metaphysicians in conjunction with those of the most celebrated observers of facts, such as Bacon and Hippocrates, Locke, and Sydenham." Of these four names, England claims no fewer than three.

8. *Anti-Neuralgic Pills.*—Dr. Eisenmann of Munich, in a well written paper on the general employment of alterative medicines, points out the utility of combining two or more of them together in certain cases of disease. He dwells particularly on some cases of severe neuralgia, which are more or less connected with an agueish state of the system, but which nevertheless resist the effects of bark alone. If, however, he says, a medicine, which acts on the nervous system, be combined with the bark, we shall often succeed in effecting a cure. He strongly recommends a combination of quinine, strychnine, and extract of belladonna. (The remark is very rational and just.)

9. *Usual Course of Rheumatism in the Horse.*—M. Tessier remarks that M. Boullay, one of the most experienced veterinary surgeons in Paris, assures him that the ordinary course of rheumatic inflammation in the horse is the very reverse of what is usually the case in the human subject. In the latter, as all know, the affection of the joints is primary, and that of the pleura, pericardium, or other internal part is consecutive or secondary; whereas, in the former, pleuritis is generally the primary, and the arthritis the secondary affection.

10. *Successful Case of Cæsarian Operation, successful both for mother and child.*—The report of this case is contained in the number of the Journal de Medecine de Lyon, for last February. The woman was 35 years of age, exceedingly deformed from rickets, and pregnant with her second child; the first had been extracted by embryotomy. The necessary incisions were made, and the child, and afterwards the placenta, extracted in the course of two or three minutes. The child cried lustily when taken out, and continued to thrive. The mother was threatened with peritonitis; but this fortunately subsided, and the wound was nearly quite healed by the fortieth day after the operation.

Medico-Chirurgical Review.

EXTRACTS FROM FOREIGN JOURNALS.

(For the Medical Times.)

The Presence of Urea in Human Inflammatory Blood. By Francis Simon. (*From Muller's Archives.*)

Some time ago I communicated in this Journal the intelligence that I had succeeded in discovering a small quantity of urea in the blood of calves. Not long since, with a view of exhibiting the hæmato-globulin, I commenced an examination of the coagula, from six bleedings performed on males and females, who suffered from inflammation of the respiratory organs. The coagula were heated in order that the albumen might harden; then the mass was reduced by long trituration to the state of an exceedingly light and soft powder, which was several times digested with ether in a distillatory apparatus, for the purpose of separating fat. I then boiled the residue, freed from fat, with alcohol of sp. gr. 915, and I obtained by cooling, a great quantity of characteristic, beautiful hæmato-globulin. The spirituous solution, filtered away from the separated hæmato-globulin, I evaporated in a water bath and washed the residue with anhydrous alcohol. This solution I mixed carefully with alcohol, acidulated by sulphuric acid, in order to neutralize saline bases; I then shook the liquor with carbonate of baryta, filtered it again, and evaporated to the consistence of a syrup. The syrup-like residue was mixed with nitric acid, and evaporated under the vacuum of the air pump, by which crystals were formed that, when examined microscopically, appeared to be aggregated rhombic tubes. These crystalline masses dissolved with ease in anhydrous alcohol; as the alkaline nitrates under similar circumstances are insoluble, it was certain that I had to deal with nitrate of urea. After another similar examination, it would appear to me that the quantity of urea found in inflammatory human blood was greater than that observed in healthy calves' blood.

Fracture of both the Upper Cervical Vertebræ. By Dr. Spangenberg, Garrison Staff Physician.

On the 8th of July, a sub-officer of the Artillery was thrown from a skittish horse; he fell sideways, with his head upon the not very hard ground. Soon after, riding half a league farther, he alighted in a village, and felt suddenly a cracking in the neck, upon which he fell senseless on the earth. After a few minutes his senses returned, but he was not able to raise his head. This he effected by the help of his hands, which he was obliged to use to keep it in the erect position. He was immediately removed to the Lazaret at Coln; upon his arrival there, after accurate examination, the following were the results.

Just posterior to the coronal suture, upon the left parietal bone, there was found a slight swelling, the size of a dollar. On the upper part of the neck was a considerable swelling, extending on both sides, but more on the right. In the same region, directly upon the axis, a peculiar elevation showed itself; it was hard, appeared movable, and in its form resembled the spinous process of the seventh cervical vertebra. Upon any pressure upon it, upon any elevation, especially upon the least turning of the head, the patient felt violent pain. From the before mentioned cracking, and the continual great pain, he expressed his fears that he had suffered a fracture of the neck. Had the elevated head no support, it sank after a few minutes forwards, and fell with the chin upon the sternum. The countenance was very pale and fallen-in, the pulse hard, small, and frequent, the respiration something quickened, the temperature of the skin little heightened, great thirst, appetite quite gone. Crepitation could not be clearly perceived in the place of the cracking, pointed out by the patient. Clear symptoms of pressure, rupture or laceration of the spinal marrow were completely wanting; namely, great disturbance in the functions of the organs of respiration and digestion, abnormal activity of the organs of sense, paralysis of the extremities, &c.

Attempts at re-position were not carried out, partly from the want of sufficient symptoms, partly from the fear of sudden death, which might by these have been easily brought on. The first treatment was the horizontal position of the patient, the straight position of the head by means of a proper bandage, antiphlogistic treatment, light diet, and the greatest care taken to relieve the pain and quiet his mind. By this treatment, the primary inflammatory symptoms were by degrees, and in the course of ten days, in great part removed. New symptoms had not appeared, the patient felt himself in general better. The desire for food had returned, and the activity of of the stomach and bowels, as also of the urinary organs, were regular. Sleep only was much wanting; and the fear that his neck was broken had rather increased than diminished. The swelling in the neck and on both sides was completely sunk; the hard elevation like the spinous process of the seventh vertebra was in the mean time completely unchanged. The patient, on account of the occurring weakness, had stronger diet, and, instead of the antiphlogistic treatment, mild strengthening means were employed. He improved daily; after two months he was able to leave his bed, raise himself with the help of the attendant, but could not hold the head erect without support. For this purpose the apparatus of Shaw was procured, by which he was able to take at first short walks, and by degrees longer, and by which, notwithstanding the

continued crackings in the neck, his hope of recovery increased. Slight disorders, rheumatic, catarrhal, &c. occurred, but were soon removed.

In the spring of 1840, the patient complained anew of pains in the neck, of difficulty in swallowing, especially in swallowing the food, great weakness of limbs, want of appetite, and sleeplessness. The head could not be kept erect by Shaw's apparatus on account of the increase of pain, and on the hurt place clear symptoms shewed themselves of chronic inflammation of the vertebra (Spondylarthrocace). The means employed against this, leeches, cold applications, neutral salts, arnica, frictions with ung. neapolitan, linim. camphor volat, liniment phosphor, light touches of hot iron, and similar irritants to the skin, internal use of phosphoric acid, sabina, calmus, phellandrium, chiva, &c. effected in the course of six or seven months, a marked improvement of the symptoms. The patient improved daily. In bed he felt himself free from pain, when he was in the horizontal position, and his head, by means of a simple bandage of linen, applied under the chin, and made fast to the upper part of the bedstead, guarded from sinking down. He was again able to promenade, and needed for the upright position of his head only a slight support, either with one of his hands, and standing still, a simple unelastic tobacco pipe served, the point of which was placed under the upper incisor teeth. Soon after, an abscess developed itself on the clavicle on the right side near the sternum, it appeared to have no connection with the affected part of the neck, and after having discharged a considerable quantity of thin matter for about thirteen months, again healed. The cracking in the neck had disappeared, and the before-described peculiar elevation could hardly be perceived. In autumn he was sometimes very well, and in such state that he made preparations to visit his native province. The head was held upright by means of an elastic collar for the neck. He went on well till the middle of February, 1841; he became worse, and after dropsical effusions he died in October, 1841.

Section. The whole body was much emaciated, but presented nothing wrong, besides the diseased appearance of the neck, and a marked œdema of the feet. Beneath the upper layer of the muscles of the neck a purulent cavity shewed itself. By further dissection, the deeper-lying muscles next to the head were found partly degenerated, partly destroyed; the transverse processes of the third and fourth vertebræ carious, and also the bodies of all the cervical vertebræ attacked by caries. The ligaments and cartilages, especially those of the atlas and axis, were more or less decomposed and corroded. After the removal of the trachea and œsophagus, a purulent cavity shewed itself behind them also, which extended itself from the cavity behind the head, before the bodies of the vertebræ downwards to the seventh vertebra, and contained about four ounces of stinking pus. With this the above mentioned abscess on the clavicle communicated, by a narrow canal running between the muscles of the neck on the right side.

After removing the remaining soft parts of the neck, and the separation and removal of the vertebral column of the neck, the posterior arch of the atlas was found broken on both sides, close to the articular processes, carious, and in this place nearly re-absorbed, the body and transverse processes of the second vertebra degenerated, and the odontoid process broken. This broken rudiment hung to the body of the vertebra only by a ligamentous adhesion. The ligaments connecting the occipital bone with the atlas and the cervical vertebræ were partly destroyed. The medulla spinalis, protected by its peculiar covering, was entirely unaltered and normal.

Inside the cavity of the skull, the brain and membranes were perfectly normal except in one small spot, near the coronal suture, where the membranes adhered to each other. In the thoracic cavity all the organs were in their normal state. The abdominal viscera were completely sound, only some aphthous ulcers shewed themselves in the small bowels.—*Berlin Medicinische Zeitung.*

Plumbi Aceticum in Cholera Sporadica.

Dr. Treumann, Circle physician in Freienwalde, found the acet. plumb. combined with strychnine instantaneously to stop the vomiting in the cholera sporadica, and it led to recovery, although the secretion of urine was not established before 48 hours. Not less, Dr. Steinbeck, in Brandenburg, praises the plumb. acet, combined with pure tannin in solution, in the same disease. He considers this combination as the soverign remedy, where a commencing or established softening of the mucous membrane of the bowels is ascertained.

A Female without the Uterus.

Females who are without the uterus are not so rare as was formerly supposed; certainly, those are more rare who have two, or at least, a double uterus. Since I made known my observation in 1832 in *Rust's Magazine*, and showed some older cases, many examples of this want have become known; some such have been mentioned in this gazette. I will not now increase the number by a new case, but beg only to communicate some additional remarks. I would first state, that both the younger sisters of the described maiden, who at that time were not arrived at puberty, gave indications of a similar defect, but both are now fully developed and have their menses. I ought further to remark, that the examination which was made on suspicion of the want of the uterus, was very carefully performed, so as to avoid being deceived. I have since examined a maiden æt 20, by the wish of her mother, who had the appearance of a virago, and as yet had not menstruated. The vagina was very deep, and at its extremity was a small hardish body; the form of the os uteri could not at all be perceived; when I had passed a catheter into the bladder and a finger into the rectum, this thing comported itself as though no other organ lay between them, and as if they were separated only by the membranous wall of that substance. I left this case doubtful, and learnt after half a year that the menses had appeared and returned at the regular period. In respect to my communication in Rust's Magazine, I have convinced myself by continued knowledge of that family, and repeatedly presented opportunities, of the accuracy of the first discovery.

Of the elder of the two uterus-less sisters I have nothing further to relate; but the younger has since given occasion for some communications worthy of notice.—I had learnt from the mother, and at that time also pronounced, that this maiden appeared to have no inclination towards the other sex. This was an error: she fell in love and engaged herself to a young man, who wished to marry her, and on which she depended. As the mother made known this intention to me, I cautioned her apprehesively, and exhorted her not to permit the deceit, (as the vagina even was wanting.) The affiance was afterwards broken, as a quarrel occurred, before the affianced had learnt the condition of his intended, but not long after, a second suitor wooed the fair maiden, and now I heard of her firm resolution to marry him. I had truly no business to interfere in the affair, and considered that the general law of the country said it can be valid alone by reciprocal consent. The mother remarked that the future husband was no longer young, that already two wives had separated from him and chosen other men, so that probably he would make little complaint.

Unusual Metastasis.

A woman, aged 30, of nervous temperament, some time married, suffered in consequence of some moral impressions from leucorrhœa, which drew after it secondary pains in the limbs, &c. As the patient became very weak she consulted Dr. Ottani, who prescribed ferri sulph. internally, calomel in combination with cicuta in minute doses, and an injection of a weak solution of zinci sulphat. The discharge ceased in about a week.

Soon after, Dr. Ottani was again called to this woman; she found herself unwell, but she could give no accurate account of her feelings. She complained especially of an extraordinary heaviness. One could discover nothing further than a quite peculiar distortion of countenance, from which some severe suffering might be concluded.

She was on the following morning attacked with violent pain in the abdomen, nausea and vomiting. The pulse small, contracted, hardly perceptible, the tongue trembling, the thirst unquenchable, the skin cold, the forehead covered with clammy sweat. Dr. Ottani held this condition for irritation of the stomach and intestines, ordered ol. ricini, fomentations and emollient clysters. Notwithstanding, the pain greatly increased until the next morning, when a quite painless discharge of a yellowish matter took place from the navel, which was exactly like that which before came away from the vagina. This discharge continued above a month, and first ceased when by the efforts of nature, the leucorrhœa had become established in its former place. Since then she has quite recovered—*From the Review of Italian Journals in the AllgemeineZeitung of Surgery, &c.*

A great Operation performed in the Hospital of the Holy Ghost in Rome, communicated by Metaxa.—*From the Allgemeine Zeitung as above.*

A man in a quarrel received a stab, which struck the last or false rib on its front part, about the middle, obliquely from below upwards. The symptoms of a penetrating breast-wound were present. The wound was united by adhesive plaister. Some days after, fever came on with dyspnœa and considerable pain in the wounded place. A strict antiphlogistic treatment mitigated the symptoms; but an abscess formed at the place of the wound, which was necessary to be opened. After the opening, the bone was found to be denuded. Every care was taken for a month; there was yet no appearance of exfoliation, but as it was the cause of the fever, so was absorption of matter or flow of matter into the cavity of the thorax to be feared. Therefore, Professor Fiori resolved on the removal of the diseased part of the bone. The disease had, however, extended farther than was imagined, and Prof. Fiori saw himself obliged to exarticulate the whole rib. The operation was fortunate, and the patient recovered in less than two months. It was now found, that the wounding instrument had obliquely cut through the rib in its middle, on the upper side.

On the Curability of Ovarian Dropsy—Remarks on a Monograph on this Disease.—By Dr. J. C. F. Ollenroth.

Now follows the illustration of the proposition made many years ago by A. F. Richter

in his Principles of Surgery, and in his *Therapie Speciale*, namely to change the palliative operation of paracentesis into a radical cure; which may come to pass, if after successful evacuation of the fluid, an elastic tube is introduced, and thereby inflammation produced in the sac. Physicians have not regarded this proposition hitherto as it deserves, and no one has followed it out as an useful method of cure. It has belonged to M. Ollenroth to effect it.

The following method is recommended to be carried into execution. The removal of the fluid is first effected in the usual manner: by which one is informed of its quantity and quality, and occasion is given that the sac become adherent to the peritoneum at the place of the puncture. We must not wait too long for the radical treatment, that is, not to let the sac become again full to its utmost extension. The trochar with the tube must then be sunk in at the identical point of the first puncture, and a part only, about two-fifths, of the water, be let out, the tube closed with a stopper, and made fast by means of an abdominal bandage, and a measured pressure upon the abdomen and the tumour be effected. We must now, in one or two sittings daily, draw out the always new quantity of water; during this, the tube must continually remain in, only opening the stopper. In this tube lies a second, provided with closed ends. The tumour decreases by degrees, the sac contracts, and at length its walls adhere together. In the meantime the fluid let out will become more sparing, thicker, more purulent, afterwards pus, until from the tube, and with it from the enlarged puncture wound, a little fetid and ill-coloured moisture trickles out. At length the tube itself will be thrust out, the wound closes itself with good granulations, and the disease is cured.

In the case in which this method of cure was used, the tube remained twenty-seven days in the wound. In a second case, where the author used this treatment in ascites, it remained in twenty-three days. This last case gave no certain results, for the patient died, and dissection was refused. — *Medicinische Zeitung, March 8th.*

Pustular Eruption after the internal use of Antimony.

In a fisherman æt. 34, who, on account of pneumonia in the state of hepatization, had taken 10 grains of emetic tartar in 36 hours; at first every hour, but after taking 6 grains, ½ a grain every two hours. About 24 hours after the last dose, an eruption made its appearance, which most accurately agreed with that brought out by friction with the ointment of tart. emet. of Autenrieth, of which my colleague Dr. Moses who saw it in its perfection, was convinced. The eruption consisted of pimples and vesicles, which quickly enlarged, and for 2 days filled themselves abundantly with pus; they had a highly red, inflamed circumference, so that they resembled small-pox or small cow-pox, and were very painful. After the course of a few days they became dry and formed crusts, some few only were larger, and appeared like ecthymatous pustules. The eruption first took place on the inner side of the right fore-arm, then over the whole back, where the pustules stood in part separated, in part in groups (hitherto they have been observed to my knowledge only on the abdomen.) Neither vomiting nor perspiration had taken place; although some watery motions have preceded the eruption.

The success of the cure of the hepatization of the right lung, was strikingly favourable in this individual, for former frequent pneumonic attacks, intermittent fever and dropsy, had so reduced him that a very doubtful prognosis was permitted. The respiration became from day to day freer, and after the expiration of a week his reconvalescence was assured.

As in the present state of knowledge we cannot at our will call forth the eruption by the internal use of the antim. tart. of Autenrieth, so would we, when we would follow this therapeutic method, depend only on the ointment. For quite irrespective of the benefit, which the pustular eruption warrants as an irritant of the skin and derivant, the outwardly applied ant. tart. also exercises a deeply penetrating effect, furthering the flowing from the internal organs. It appears to me not to be going too far, when we assert, that the consequence of the frictions must in the most important case, be ascribed in general to the absorption of the remedy into the whole mass of the fluids. For this also the variety of manner of the eruptions speaks—appearing much quicker and less powerfully after the digitalis ointment of Kopp; but particularly the experience, that the pustular formation seldom confines itself to the place where the antimonial ointment is rubbed in, and thereby becomes erythematous, and that even at distant places, for instance on the sexual parts of children, secondary eruptions come out. The trivial explanation of its removal by means of the child's fingers is quite objectionable; for as the emetic and derivative effect of the external application of the ant. tart. is now an acknowleged fact, so according to the above mentioned observations the fact cannot be doubted, that the pustular formation also does not appertain to the local, but to the general effect of this medicine. Besides this, other metallic remedies, (Mercury, Gold,) offer analogies enough, to expect from the application of tart. emet. in the form of ointment, the most intense general effects possible, which have become represented by the pustular eruption. And this easily explains the peculiar inclination to the destructive process in ulcers arising in the skin, and cellular substance, by the continued application of the antimonial ointment of Autenrieth.

TO CORRESPONDENTS.

We shall next week publish an original paper by the celebrated botanist, Mutis, *on the "Peruvian Bark," translated by Colonel Wright, late Governor of the province of Loxa. This important paper was never before printed.*

Mr. Guthrie, Mr. Alexander, and the case of Cataract.—*We are, as we confidently expected, authorised to give the most direct denial to every statement contained in the rumour to which we referred last week. The whole is an invention, without even a shadow of reality to base it on. Mr. C. Guthrie, we are assured, though he has repeatedly operated for cataract at the hospital, never performed the operation in his father's presence on any private patient. We are much gratified to make this announcement, which more than justifies the step we took when mentioning last week the cause that existed for it. The falsehood bearing the stamp of Mr. Alexander's name on its surface, was percolating through every part of the profession; the last person who would have heard of it would probably have been Mr. Guthrie, and by the time it reached him it would have so far imbued the mind of the public, that no disavowal would gain credence. We know of no worse man than the assassin of character, who can coolly concoct such calumnies as we have here to denounce. If ever reputation be dear, it is surely when a well-spent life, not useless to science, depends for the enjoyment of all its richly earned treasures on the zest which an unstained reputation gives, and the man thus wantonly striking at the happiness of another, shews at once the malevolence of a fiend, with the cowardliness of the most abject of wretches. If we could trace his name we should feel infinite pleasure in noting him in our pages as one too despicable and defiling for social converse.*

A Looker-on.—*Dr. Dickson and Dr. Laycock, the principals, have spoken, and we feel very indisposed to see a conflict between seconds. We will, however, again look over the letter.*

Mr. P. has our thanks. The article scarcely suiting the bulk of our readers, we decline troubling him further.

M. S. (a Subscriber.)—*Mr. Liston, of the University school, did not commence practice with acting Hamlet. It was the Paul Pry Liston who began life with tragedy, and ended it with comedy. The English Lisfranc goes more in the other direction.*

W. B.—*Mr. Guthrie has written a clever book on the subject.*

X. Y. Z.—*A good case correctly given we are glad for; indifferent ones we decline. They should be sent to the* Lancet.

Received.—*Mr. Day—M. P. H.—a Pharmaceutical Associate—K. L. B.—Scrutator.*

Analysis.—*Next week.*

THE MEDICAL TIMES.

Saturday, July 8, 1843.

Venenum in auro bibitur.

A pamphlet has just been placed in our hands which, important alike from the nature of the subject and the information and solid sense of the writer, calls for more than a mere critical notice. The Poor Law, it is true, is a matter on which much argumentation and eloquence—and much tediousness, it may be—has been already expended. Its action, particularly on the fortunes of medical men, has been frequently enough, and in sufficiently elaborate articles, commented on in our own and other medical journals—but yet we are much mistaken if, in the present lull of medical politics, the facts and views enunciated by the anonymous pamphleteer, will not command some interest with our readers.

Wherein, as regards Medical Poor Law relief, lay the superiority of the old over the new system? Obviously in two circumstances: the greater limitation of the medical officer's district, and the more adequate remuneration awarded for his services.

The former ensured over medical relief a superintendence which was made vigilant, kindly, and judicious, by the proximity of all the relative parties as regarded local position, and by the mutual acquaintance, interest, and sympathy thence arising. The districts being comparatively small, each parishioner felt, not a remote, but an immediate interest in the poor's management—his vote was of consequence—he knew whom it affected, and why—he knew what he was about, and if he did the poor, or their benefactors, medical men, injustice, he could not, as now, do it ignorantly, and could not shelter himself under the convenient exclamation now so frequently made in substance, "Sir, do you want impossibilities? How can so large a district be managed by any court of guardians—less than guardian angels—without some little thing or other going a bit astray in this corner or that?" Now, the Poor-Law Commissioners, in the hot zeal of their bran-new royalties, considering it the first of their duties to renounce every thing, however good, which carried about it a smack of the *ancien regime*, early

set themselves to destroy the system of sympathy and judicious vigilance, involved in each parish's appointment of its own medical officer for the poor. The idea of economizing—not the poor's journies, when seeking relief, nor their agonies of pain and anxiety while expecting medical assistance —but the pence of the rate-payers, gave them an overweening love of large districts, and their assistants, carrying out the principle, made it a cardinal point to have but one medical man to do all the work for these large *congeries* of parishes. The pamphleteer thus practically illustrates the *humanity* of this *statesmanlike* policy:—

The situation of the female is more distressing. Taken with the pains of labour, with three or four young children hanging on her bed, she is told, after hours of suffering, that she can only be relieved, she can only be saved, through the judgment, the knowledge, the assistance of the parish doctor. The husband sets off a distance of from ten to fifteen, and even twenty miles, (which is positively necessary in many unions at present,) first to the relieving officer, and then to the doctor. After a walk of six or eight hours, he may, perchance, find both; and as the surgeon will have several miles to go, it is possible that the poor woman may have his assistance, if no accident should happen any where else, within twelve or fifteen hours after it has been so urgently wanted. It is probable that on his arrival he may find that she is no more, or that she has suffered in so dreadful a manner as to be for ever unable to perform her duties as a wife or a mother. She may crawl about as long as she may live, a deplorable object of distress to herself, and of disgust to those to whom her situations is known; until exhausted with suffering and pain, she dies, leaving her little family to the parish, and her dispairing husband a ruined, lost and broken-hearted man. Delicacy forbids this most painful subject being further illustrated. It was, however so fully explained to Mr. G. Lewis, some eighteen months ago, as to cause him to express his horror at such things taking place. He asked whether the two pounds recommended as a payment for the immediate attendance of the nearest medical man in these cases, would prevent, as far as human foresight could do it, such evils; and, on being informed that it would, he said, "You shall have the money: I would not for any consideration such things should happen if money can prevent them." And in the medical order of the 12th of March, 1842, two pounds are ordered to be paid to the union surgeon for a proper attendance on all cases of difficult labour. Mr. G. Lewis deserves the thanks of the whole sex for his humanity and his kindness on this occasion; and there is no married woman in England who will not do herself honour by rising to receive him the first time he enters a room in which she may be seated.

The mischief arising from protracted labours has been well selected by the author; but other maladies present, from delay, consequences, which if not of such telling effect in the narration, are quite as calamitous in effect to the sufferer. We need scarcely refer to diseases of a cerebral or enteric character, such as inflammation of the brain, cholera, &c. There is something melancholy in the extreme in picturing to ourselves a poor man, with a family depending on him, removed by the present law some fourteen, or fifteen, or twenty miles from his medical attendant, and suffering under a malady of slight consideration if early treated, but certainly fatal if neglected. The very distance deters him from sending for the doctor. While the least doubt hangs on his mind as to his peril, he will neither trouble the messenger or the doctor with such a journey; and when the doubt is removed it is then too late. The trouble may be taken, and the doctor will arrive only to find himself of no service.

Without dilating further on the size of the districts—a mischief shortly dwelt on by the pamphleteer, and which the commissioners are recognizing by gradually introducing a greater number of medical officers —we now take up the question of the want of medical remuneration. The writer is copious on this point, and we shall give the best parts of his observations:—

From Lady-day, 1841, to Lady-day, 1842, the sum paid to the surgeons of unions, for the medical relief given to the poor, was £153,481, according to the last or ninth Annual Report of the Poor Law Commissioners; and from Lady-day, 1842, to Lady-day, 1843, it appears, from the return called for by Colonel Wood, and printed by order of the House of Commons, that this sum was reduced to £139,784; and as the payments said to have been made have been often much exaggerated by the clerks of the different unions, so as to be, in some instances, from one to even five times as much as the amount actually paid, the aggregate sum of £139,784 is probably in excess by several thousand pounds, more especially as the annual salary or stipend allowed to each officer has been reduced, in many instances, since last March.

The Ross Union, in Herefordshire, contains 55,320 acres; 14,771 persons, and a poor-house, with 120 inmates on the average. Four medical men were employed, who were paid £318 a year: the lowest sum they ought to receive being £400. The Board of Guardians, desirous this year of diminishing this even too small sum, directed that ONE doctor only should be employed for the whole union, containing these 55,320 acres, and 14,771 persons, at a salary of £220. They defied all the orders of the Poor Law Commissioners, and advertised for the doctor in the London, Edinburgh, and provincial papers, thus showing what a Board of Guardians will do in 1843. The Commissioners honestly refused to permit such an arrangement, and the old medical officers, for the sake of peace, declared themselves willing to submit to any thing the Poor Law Commissioners would decide upon, and wrote to them accordingly. The Poor Law Commissioners recommended "mutual concession" between guardians and doctors. The medical men submitted, and offered to take £250 instead of £318. This the guardians refused, and proposed to employ three strangers instead of one. This the Poor Law Commissioners also refused to allow; but they informed the old medical officers at the same time that they could not enforce a higher rate of payment than the guardians should think fit to give. The guardians then issued another advertisement, fixing the price they would pay for each of four districts into which the union was divided. Several unfortunate candidates, and there are many such in all professions, appeared ready to do anything with the hope of obtaining even a livelihood; and three of the old surgeons, trusting that something would be done by the legislature on the subject, yielded, as preferable to encouraging the influx of so many strangers; and they have again undertaken a duty which cannot properly be performed for the money. The fourth place is filled by a stranger, who is thus unnecessarily introduced, to the probable detriment of the existing members of the profession, and of the poor, if he should fail to succeed in obtaining a living.

In the South Molton Union, the Board of Guardians, at Lady-day, 1840, appointed the medical officers without naming the salaries, which they left to be settled by the Poor Law Commissioners; and Col. Wade, then the Assistant Poor Law Commissioner, after a rigid inquiry into the state of the union, fixed the salary for each medical district. That for the third district, containing two parishes, was fixed at £15, exclusive of midwifery, the population being 519, spread over 5,400 acres, the extreme distance from the residence of the surgeon being five miles and a half. In the spring of the present year, the guardians thought fit to add a third parish to the district, doubling the number of the population to 1,094, and the estimated number of acres to 11,000, the extreme distance from the home of the medical officer being augmented to six miles and a half, for which additional duty they offered £2; that is, to increase the salary from £15 to £17, having doubled the work.

The surgeon objected, and asked £23, exclusive of the midwifery, and according to the medical order: on the 6th of April, 1843, the clerk of the union signified to the surgeon the intention of the guardians to request the Poor Law Commissioners to fix the amount of remuneration which ought to be paid to him, and the guardians and the surgeon each laid their statements before the Poor Law Commissioners. On the 29th of April, the clerk of the union informed the surgeon, that the Poor Law Commissioners had expressed a reluctance to interfere in fixing the amount, and hoped the parties would settle it themselves; in consequence of which, the guardians would increase the payment of each midwifery case from 12s. 6d. to £1, to which pound the doctor would have been justly entitled from the distance in the greater number of cases, and which would, in fact, have added but little to his salary. He therefore declined, and requested the Poor Law Commissioners would fix the just remuneration for his ordinary services, and that he would abide by their medical order for the midwifery cases and accidents. This the clerk of the union informed him the Poor Law Commissioners declined to do, and that the Board considered this answer (from the Commissioners) as affirming the sum proposed by them, viz. a salary of £17 and £1, for each midwifery case. The surgeon, who had received £15 and £1 for each midwifery case for one-half the work, did not believe the Poor Law Commissioners could mean any such thing; he therefore addressed the Poor Law Commissioners, stating, that he had not requested them to "interfere authoritatively" on the subject, but merely to say, as a matter of arbitration, both parties having referred to them, what ought to be the proper salary for a specific district.

The writer properly remarks that the clerks and auditors of the Boards of Guardians are infinitely better treated than medical officers—receiving much higher salaries for lower duties. Indeed, it is not at all wonderful that, with such miserable payment, the master and mistress of the Union should—as we are informed they in some places do — treat them as mere subordinates.

The remedy is thus glanced at:—

The sum total of the money collected in England and Wales, on account of the maintenance of paupers, out-door relief, and other incidental charges, is £6,754,404, according to the ninth or last Annual Report of the Poor Law Commissioners; and less than threepence in the pound on which, will give a sum larger than is necessary (in addition to that which is already paid) to satisfy the medical profession, and to supply the poor with that proper and just assistance which their unhappy state deserves at the hands of their more fortunate neighbours.

Again:—

The medical order of the 12th of March, 1842, settled the rate of payment for accidents and midwifery cases in a fair and reasonable manner; but it left the salaries to be given for the charge of the workhouses, and for the medical care of the out-door poor in as unsatisfactory a state as before; and the good which would have resulted from this order of the 12th March, 1842, as the half of a whole measure, has been nearly lost for want of the remainder. It must, however, be stated, to

the high praise of the Poor-Law Commissioner, Mr. G. Lewis, that although he and the President of the Royal College of Surgeons could not agree as to the exact sum which ought to be paid in addition for the *ordinary* services of the medical officers of unions, he admitted most freely that these gentlemen were under paid, and suggested the possibility of his being able to augment the whole of the money then granted by one-third. The President of the College of Surgeons declared, that he could not recommend it to the Council to sanction a less sum than two-thirds, which would be barely sufficient. Mr. G. Lewis, whose conduct to the medical profession has been such as to deserve the thanks of every medical man in the empire, then proposed, as he did not feel he could grant the whole sum said to be necessary without higher authority, (although he admitted that the amount was not unreasonable,) that the Secretary of State should be requested to hear the statements on both sides, and decide as he might think fit. Sir James Graham was pleased to go through the whole of the points under discussion, and he appeared to come to the conclusion that the amount proposed by the President of the College of Surgeons was reasonable, and might be granted with propriety. It would serve no good purpose to pursue this part of the subject further, although the Secretary of State has, unfortunately for the sick poor, not though it right to authorize these necessary alterations.

A careful investigation, made from the observation of several medical men, unacquainted with each other, shows that the sum which ought to be paid for attendance on the poor, and for the medicines given to them in a workhouse, must differ according to the nature of its inmates. For aged, infirm, and sick persons, the sum granted should not be less than 34*l.* per cent. When the workhouse is filled by children, 15 per cent. may be sufficient, and from 20 to 30 per cent. would be a proper remuneration where all classes are mixed together, in equal proportions. In some workhouses these sums are at present allowed; and there is no good reason why the payment for medical services should not be in all alike.

The medical order of the 12th March, 1842, is incomplete, and unjust in some points, unless such additional provision is made, for payment is only granted by it for cases of operation and accident, provided the sufferers are attended at their own homes

The author tells us that the payments for extraordinary services have been refused altogether by several boards, and deducted out of their former salary by others. Well may he exclaim that the power of the Commissioners, so potent once, has lapsed to the Guardians.

We have marked the following "bits" from the pamphlet, as worthy of registry.

In answer to the explanation of the Commissioners, justifying the low rate of remuneration in the northern counties (occasionally, one farthing per head) we have these remarks:—

The union surgeons of 112 poor-law districts in Northumberland, Durham, Westmoreland, Cumberland, the North, East, and West Ridings of Yorkshire, Chester, and Derby, were wittten to for this purpose. It appears, from the answers of these gentlemen, that, although the statement of the Poor Law Commissioners is correct, as founded on the reports they received in 1839, and have lately printed, that these reports do not apply in 1843. The dispensaries alluded to were formerly paid by the parishes or townships for the medical relief they gave to the sick poor, even to the amount of £100 a-year at Macclesfield, £150 at Huddersfield, Preston, &c. &c.; but these payments have been withdrawn since these reports were made in almost every instance, and all persons who receive parish relief are almost invariably refused assistance from the dispensaries. Kendal is an exception; but there the dispensary is so poor, that general relief cannot be long granted, unless it should receive some particular pecuniary support. With respect to the northern collieries, and to the factories in Lancashire and in the West Riding of Yorkshire, the common custom is for the owners to pay only for the accidents, and not for illness; and as they do not always employ the surgeon of the poor law union in cases of accident, this gentleman is by so much the worse, inasmuch as the Boards of Guardians must, under the medical order of the 12th March, 1842, have paid him extra for the accident or operation, he being very probably in attendance, for little, or almost nothing, on a case of illness in the village in which it had occurred. The London Mining Company, near Stanhope, under the presidency of Mr. Masterman, M.P. for London, is an exception to this general custom, as they employ a surgeon to attend their workpeople under all circumstances.

NECESSITY OF INDEPENDENT MEDICAL INSPECTORS.

In one of the London districts, several persons had suffered from fever, and some had died in an alley in which all sorts of filth were permitted to accumulate, and which required to be thoroughly cleansed and drained. The parish surgeon stated to the Board of Guardians the necessity which existed for this being done, and received a private intimation in return, that the alley belonged to one of the guardians, and that if he said anything more on the subject, he would be removed from his office on the next election. It probably was insinuated that such a state of things was perhaps intended by Providence for the prevention of the increase of the population among the poor, and that the natural order of events ought not to be interfered with, merely to save a little time and medicine to the doctor. In other places, where the parish surgeon has found dozens of both sexes, and of all ages lying almost naked on the floor, even in the workhouses, and has desired to have these horrors mitigated, he has been told to mind his own particular business, if he wished to retain his office.

ARCHDEACON WILBERFORCE'S SENTIMENT.

It has been stated from grave authority, that the medical man who attends the richer inhabitants of a district, and who oftentimes receives as little for his trouble as they can possibly give him, ought to attend and to supply the poor with medicines for little or nothing. It is so well known as not to be disputed, that no men do more kind charitable and human acts than medical men; that none, not even clergymen, give up more of their time to the poor. They do it from the purest principles of charity; but why they should do more as a matter of right than men of any other profession or occupation, has never been shown. They pay their share of the poor-rate like every nobleman, every yeoman, and every tradesman in the district, and why should they do more? The nobleman does not refrain from receiving his rent from a poor man with a large family; the yeoman does not supply the poor man with flour, except at the market price; the butcher does not give him meat; the upholsterer does not furnish him with a bed; the clergyman does not even marry him, or christen his children without a fee, nor take only half his tithe. All men may do all these things occasionally, nay, it is to be hoped, frequently, but the medical man alone is called upon to do them always, because it is said, attending on the poor may, perchance, give him an opportunity of obtaining the rich if he should be successful; although it also enables the rich man to avoid him, if he should be unfortunate in so many cases as to raise a doubt of his competency. The attendance on the poor of a district is not merely an exercise of the mind, which actually costs nothing; it is often a matter of great labour, of great personal inconvenience and annoyance. The medicines for the poor, which ought to be of the same quality as those for the rich, are high in price; and the duty cannot in an ordinary district, be thoroughly done without an extra horse.

With these extracts, we again leave this most important subject in our readers' hands. We have no wish to see them drawn from their professional duties to take an active share in the strife of politics, but we cannot help hoping that they will not omit, through apathy or inattention, any opportunity of exercising, in a quiet and gentlemanly way, the power they possess to influence to an active interest in the removal of our grievances, the members of parliament, with whom there is no one of us that does not hold at least the relation of *constituentship*. The medical profession, much as it has been neglected and injured by Parliament, has as much power for its own protection as any other class, if it only know how to exercise it, and make it felt. THE PROOF OF THIS, WE TRUST, WILL SOON APPEAR.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

E. STANLEY, Esq., President, in the Chair.

June 27th.

On the Influence of Rickets upon the Growth of the Skull. By ALEXANDER SHAW, Esq., Surgeon to the Middlesex Hospital.

This paper was the sequel of one by the same author, printed in the 17th vol. of the Society's Transactions. The object of the former communication was, in the first instance, to prove, that besides causing softening and distortion of the osseous system, rickets has the effect of arresting the process of growth; and, secondly, to shew, that owing to this interruption, the proportions of the figure peculiar to the adult are not perfectly attained by persons affected with the disease, but continue to be, more or less, those of the child. The figure of the child is characterized by the head, trunk, and upper extremities, being of large dimensions compared with the pelvis and lower extremities, while that of the adult has the former parts relatively small, and the pelvis and legs large and powerful. In persons deformed from rickets, the whole figure is stunted, but the head, trunk, and upper extremities together, when compared with the natural adult dimensions, are only defective to a slight degree, (1-13th) while the pelvis and lower extremities are defective to a great degree (1-3d.) This difference the author accounted for by supposing, that as the disease stops the growth, it interrupts, at the same time, the change then in progress of being produced in the relative proportions of the figure, and so causes the patient, when arrived at adolescence, to exhibit traces of configuration of the child. Having referred to the importance of this view, in relation to the size of the pelvis in child-bearing women, deformed from rickets, and stated, that by measuring numerous specimens, he had ascertained, that the defect of growth in this part amounts, on an average, to nearly a quarter of the natural size, he proceeded to apply the same principle to the explanation of a peculiarity in the form of the head, which he had observed as a general character in ricketty persons. This peculiarity consists in a disproportion between the size of the cranium and of the face. Between infancy and adolescence, a change in the relative proportions, analogous to that which occurs in the figure generally, takes place in the skull. Near birth, its form is characterized by the cranium being of large bulk, compared with the face, while at adolescence, the contrast is greatly diminished, owing to the face having become much bulkier in comparison with the cranium, than it had originally been. The author had remarked and confirmed his observation by numerous measurements, that the skull in ricketty persons does not attain the proper adult proportions, but, on the contrary, the cranium appears remarkably large compared with the face, just as during childhood. Thus, taking the dimensions of the face as the limit of comparison, he found that in the skull of the infant, the size of the cranium is as 8 to 1—in the adult as 6 to 1, and in the ricketty person (although beneath the standard size) as 7 to 1. He explained this disproportion by supposing, that as rickets arrests

the growth, it interrupts, at the same time, the change occurring in the relative proportions of the skull between infancy and adolescence, and thus gives rise to the childlike character of the proportions. The proposition was illustrated by shewing the contrary effects which an increased activity of the growth produces, In the figure generally, when the growth has been preternaturally active, as in tall persons, the effect of the unequal rate of development in the two divisions of the frame, is shewn by the lower extremities acquiring an undue length, compared with the trunk; so in the head, the face becomes disproportionately large, compared with the cranium; thus, by measuring the skull of the giant preserved in the museum of the College of Surgeons, the author found that the dimensions of the cranium (although above the standard size) are to those of the face only in proportion of 5 to 1 in that skull. Having next shewn, that the orbits always preserve an uniform size, whatever be the difference in the dimensions of the face, in skulls of different proportions, and accounted for this fact by referring to the anatomical relation of the frontal and maxillary sinuses to these cavities, and shewing, that the two sinuses vary in capacity according to the rate of the growth, he passed to the consideration of the growth of the maxillary bones. After dwelling on the difference in the mode of formation of the teeth, as compared with the jaw-bones, and the importance of an exact relation being preserved between the development of both parts, and referring to the observation of Hunter regarding the different rates of growth in the anterior and posterior divisions of the maxillary bones, he concluded by shewing, that as rickets has the effect of interrupting the growth of the jaw-bones, it deranges also the process of evolution of the teeth.

Statistics of Bethlem Hospital, with Remarks on Insanity, by JOHN WEBSTER, M.D.

In this paper the author brought before the Society a few statistical tables, compiled from the registers of Bethlem Hospital, accompanied by a synopsis of 70 dissections recently performed at that institution. According to these tables, it appears that, 4,404 curable patients of both sexes were admitted during the last 20 years, of whom 1782 were males, and 2,622 females;—thus giving 47 per cent. more women than men. During the same period 1446 female patients were discharged cured, that is 55 1-7th per cent. on the admissions, whilst only 823 male patients left the hospital convalescent, or 46 1-5th per cent. On the other hand, the number of deaths in both sexes, although exactly equal, or 112 of each, yet calculated according to their respective admissions, the rate among the male patients was $6\frac{1}{4}$ per cent., and only $4\frac{1}{4}$ per cent. among the females. Similar results were found to prevail among the incurable lunatics of both sexes. The author, therefore, concludes that insanity is not only more common among women than men, but also a more curable disease—so that, cæteris paribus, the prognosis may be considered as more favorable in female than male patients. The diminished rate of mortality and the greater proportion of recoveries are also clearly shewn by the records of the institution; since it appears that during the three years ending the 21st Dec. 1752, the proportion of patients discharged cured was only $31\frac{1}{4}$ per cent., on the total admissions, whilst for the three years ending Dec. 31, 1842, the cures amounted to nearly 55 per cent. The ratio of deaths also during the former period was as high as $25\frac{1}{2}$ per cent., but only 5 5-8ths during the last-named three years; that is about 1-5th the amount reported nearly a century ago.

The author next remarks on the diminished number of suicides in the insane patients admitted into Bethlem; observing, at the same time, its greater frequency among females than among males. A synopsis is next given of 70 dissections recently made by Mr. Lawrence, in which the various morbid appearances met with are carefully detailed.

The author concludes his paper with an allusion to the two sections of pathologists, at present dividing the opinions of medical writers respecting the alterations of structure met with in cases of insanity, viz., the "anatomists and vitalists," the former considering them as causes, the latter only as consequences of the previous mental affection. In his opinion, the theory of the anatomists is the more rational, and most in accordance with the present state of our knowledge of the pathology of mania.

An Account of a Case in which a Foreign Body was lodged in the right Bronchus, by Sir BENJAMIN C. BRODIE, Bart., F.R.S., Sergt.-Surgeon to the Queen, etc.—(Reported in our last number.)

On the presence of Spermatozoa in the fluid of Hydrocele, by E. A. LLOYD, Esq., Asst.-Surgeon to St. Bartholomew's Hospital, and Surgeon to Christ's Hospital.

The object of the author was to announce that since the last meeting of the Society, he had met with a third case of hydrocele, in the fluid of which an immense number of spermatozoa were present. The fluid was of paler colour than that of common hydrocele of the tunica vaginalis, and very much resembled water, with which a very small quantity of milk had been mixed. When tested with nitric acid, and also with heat, the fluid was found to contain a considerable quantity of albumen; there was also much saline matter in it. When examined with the microscope to from 3 to 4 hours, after it was drawn off, there were seen spermatozoa in a living state, and also an immense number that were dead; moreover, the fluid contained a few blood discs, transparent cysts, granular bodies of different sizes, and epithelial scales. The testis and its appendages were healthy.—From the situation and form of the tumour, it appeared that the fluid was contained in the tunica vaginalis. The spermatozoa were seen in a living state, by Mr. F. Wood, surgeon of Brownlow-street, and Mr. John Quekett, of the College of Surgeons.

Pathological Researches into the local cause of Deafness, based on 120 Dissections of the Human Ear, by JOSEPH TOYNBEE, F.R.S., Surgeon to the St. George's and St. James's Dispensary.

The researches of which this is a summary view are in continuation of a previous paper contained in vol. 24, of the Society's Transactions. The principal practical conclusion to which they lead is, that the most prevalent cause of deafness is chronic inflammation of the mucous membrane which lines the tympanic cavity; and that by far the greater majority of cases commonly called nervous deafness, ought more properly to be attributed to this cause.

The pathological conditions to which inflammation of the mucous membrane gives rise, are divided in this paper into three stages: in the first, the membrane retains its natural delicacy of structure, though its blood-vessels are considerably enlarged and contorted; blood is effused into its substance or more at its attached surface; blood has also been found between the membrane, and the membrane of the fenestra rotunda, and in very acute cases lymph is effused over its free surface. The second stage is characterised by the following pathological conditions.—1st. The membrane is very thick, and often pulpy and flocculent.—In this state the tympanic plexus of nerves becomes concealed, the base and crura of the stapes are frequently entirely imbedded in it; while the fenestra rotunda appears only like a superficial depression in the swollen membrane.—2dly. Concretions of various kinds are visible on the surface of the thickened membrane. In some cases these have the consistence of cheese, and are analogous to tubercular matter; in others they are fibro-calcareous, and exceedingly hard.—3rdly. But by far the most frequent and peculiar characteristic of this second stage of the disease is the formation of membranous bands between various parts of the tympanic cavity. These bands are at times so numerous as to occupy nearly the entire cavity; sometimes they connect the inner surface of the membrana tympani to the internal wall of the tympanum, to the stapes and to the incus. They have also been detected between the malleus and the promontory, as well as between the incus, the walls of the tympanum, and the sheath of the tensor tympani muscle, as well as between various parts of the circumference of the fenestra rotunda. But the place where these adhesions are most frequently visible, is between the crura of the stapes and the adjoining walls of the tympanic cavity; this was the case in 24 instances out of 120 dissections, being a fifth of the number. These bands of adhesion sometimes contain blood and scrofulous matter. In the third stage of inflammation of the membrane, it becomes ulcerated; the membrana tympani is destroyed, and the tensor tympani muscle is atrophied. The ossicula auditûs are diseased and ultimately discharged from the ear, and the disease not unfrequently communicates itself to the tympanic walls, affecting also the brain and other important organs.

The following is a tabular view of the state of the mucous membrane of the tympanic cavity in the 120 disssections related in the paper:—in the first stage of inflammation, 1st.—with simple inflammation of the membrane, its vessels being enlarged, tortuous and distended with blood, 10—2d, do. with an accumulation of mucus, 1—3d, membrane inflamed with effusion of blood into its substance, 3—4th, membrane inflamed, with effusion of serum tinged with blood into the tympanic cavity, 1—5th, membrane inflamed, with lymph effused into the tympanic cavity, 2—6th, membraue inflamed, with blood and lymph effused into the tympanic cavity, 2—7th, membrane inflamed with effusion of pus into the tympanic cavity, 1.

Dissections illustrative of the 2d stage of inflammation:—1st, with simple thickening of the lining membrane, 5—2d, the membrane thick and pulpy, 2—3d do. the cavity full of bands of adhesion, 1—4th, the membrane thick and flocculent, 1—5th, membranous bands connecting the membrana tympani to the inner wall of the tympanum, 5—6th, membranous bands connecting the membrana tympani to the promontory, and the chorda tympani to the stapes, 1—7th, membranous bands connecting the membrana tympani to the incus., 1—8th, do. to the stapes, 2—9th do. connecting the membrana and chorda tympani to the stapes, 1—10th do, connecting the membrana tympani and malleus to the promontory, 1—11th do. connecting the membrana and chorda tympani to the incus, 2—12th do., connecting the membrana and ossicula to the inner wall of the tympanum, 1—13th do., connecting the malleus to the inner wall of the tympanum, 2—14th do., connecting the incus to the inner wall of the tympanum, 1—15th do., connecting the stapes to the promontory, 24—16th, anchylosis of the stapes to the fenestra ovalis, 2—17th, membranous bands forming a network over the fenestra rotunda 2—18th, a broad membrane passing from the promontory to the mastoid cells, 2—19th, the cavity of the tympanum full of bands and adhesions, 1—20th, membranous bands containing scrofulous matter, 3—21st, the cavity of the tympanum full of calcareous concretion, 4—22nd, do. full of caseous concretion, 2—23rd, with ridges of bone projecting from the surface of the promontory, 2.

Dissections illustrative of the third stage of inflammation:—1st, with ulceration and thickening of the mucous membrane, attended by the formation of pus, 3—2nd, with ulceration of the membrane and loss of one or more of the ossicula, 3. It thus appears that of the first 120 dissections, there were 20 specimens in the first stage of inflammation of the tympanic cavity, 65 ditto in the second stage, 6 in the third, and 29 in a healthy state.

SINGULAR DISCOVERY.—While M. Rousset, professor at the School of Medicine, at Marseilles, was engaged in the analysis of the matters extracted from the dead body of a man supposed to have been destroyed by laudanum, he was assailed by an immense number of flies, which speedily perished, after coming in contact with the matters under analysis. This singular occurrence gave rise to the suspicion that the body contained arsenic, the well known basis of fly-poisons. Fresh researches were accordingly instituted, the modified Marsh's apparatus was used, and arsenic discovered.

ROYAL SOCIETY.

On the Respiration of the Leaves of Plants.—By William Haseldine Pepys, Esq.

The author gives an account of a series of experiments on the products of the respiration of plants, and more particularly of the leaves; selecting with this view, specimens of plants which had been previously habituated to respire constantly under an inclosure of glass, and employing for that purpose the apparatus which he had formerly used in experimenting on the combustion of the diamond, consisting of two mercurial gasometers, with the addition of two hemispheres of glass closely joined together at their bases, so as to form an air-tight globular receptacle for the plant subjected to experiment. The general conclusions he deduces from his numerous experiments, conducted during several years, are, first, that in leaves, which are in a state of vigorous health, vegetation is always operating to restore the surrounding atmospheric air to its natural condition, by the absorption of carbonic acid and the disengagement of oxygen; that this action is promoted by the influence of light, but that it continues to be exerted, although more slowly, even in the dark. Secondly, that carbonic acid is never disengaged during the healthy condition of the leaf. Thirdly, that the fluid so abundantly exhaled by plants in their vegetation is pure water, and contains no trace of carbonic acid. Fourthly, that the first portions of carbonic acid gas contained in an artificial atmosphere, are taken up with more avidity by plants than the remaining portions, as if their appetite for that pabulum had diminished by satiety.

STATISTICAL SOCIETY.

A paper was read by Professor Guy "On the influence of employments on health.' The materials from which this paper was compiled, were obtained from the registers of the out patients of King's College Hospital, and comprized upwards of 3,000 individuals, all engaged in various occupations. A series of elaborate tables accompanied the paper, shewing the different diseases to which males and females had been subject, from which the author arrives at the following conclusions. In females, the ratio of cases of pulmonary consumption, to those of all other diseases, is highest in those following sedentary employments, less in those having mixed in-door employments, and least in those occupied out of doors. The highest ratio occurs in the cases of females whose habits of life are irregular. In men, the ratio of cases of pulmonary consumption to those of all other diseases is somewhat higher in those following in-door occupations, than in those working in the open air. The ratio of cases of pulmonary consumption to those of all other diseases in the case of men following in-door employments varies inversely as the amount of the exertion, being highest when there is least exertion, and lowest in employments requiring strong exercise. Neither a constrained posture, nor exposure to a high temperature, nor a moist temperature, appear to have any marked effects in promoting pulmonary consumption. The ratio of cases of pulmonary consumption to those of all other diseases, is highest in the case of men whose employments expose them to the inhalation of dust, there being, in persons so employed, two cases of consumption for less than three of all other diseases. The ratio is also high in the case of persons addicted to habits of intemperance, there being two cases of pulmonary consumption to five of all other diseases. The age at which pulmonary consumption makes its attack varies with the employment, being earlier in those occupations characterized by a high ratio of consumptive cases. Thus it is earlier in those following in-door occupations than in those employed in the open air, and in those using little exertion than in those using much. It also occurs very early in those who indulge in intemperance, and in those whose occupations lead to the inhalation of dust. The practical rule to be deduced from the preceding observations, is that those persons who have an hereditary tendency to consumption should make choice of occupations which are carried on in the open air, and that if they are obliged to choose some in-door employment, it should be one requiring strong exercise, and that they, more than others, should avoid exposure to dust and habits of intemperance.

THE DIFFERENT MODES OF MAGNETIZING.

(To the Editor of the "Medical Times.")

Sir,—A certain influence—which, it is contended, is a salutary one—may certainly be exercised in numerous instances, by one person over another, simply by directing towards him the action of the mind, and maintaining a physical proximity or slightest physical contact. This influence, whether acting by the will or not, whether its effects are comprehensive or limited, whether it stops at mere nervous excitation or sleep, or reach to factitious catalepsy, to somnambulism, or to an abnormal and wondrous extension of the powers of vision: whatever, we say, the cause—whatever the medium—whatever the effects of that influence,—that influence is yet all that is meant by Animal Magnetism. To doubt its existence, is about as reasonable as to question that of electricity. To say that we are opposed to animal magnetism, is to use words we know nothing about. We are all supporters of animal magnetism to the extent of its truths, and our knowledge of them. What the precise truths are no one yet knows; but they exist,—and the fond imaginings, the glowing hypotheses, the mistaken facts, the falsehoods, the inventions, of *these*, can no more destroy them, than the crass ignorance, the sturdy obstinacy, the blunt denials, *of those*.

Most persons who have habituated themselves to exercise this influence, consider that the *will* is of essential importance in educing mesmeric phenomena. As one will lose nothing in experimental philosophy, in adopting an hypothesis which, if false, is easily shewn to be so—and, if true, is of such utility—we recommend those trying to magnetize, to bring the *will* into play during the operation. According to Teste, "the will is not a chimera, but a real power, to which are subjected all other moral and intellectual powers. It may not only act on oneself, but may silently influence others. To my mind," he adds, "the art of magnetizing reduces itself to the due exercise of the powers of the will." Deleuze, who has written an able work on mesmerism, thus explains his manner:—Let there be no more witnesses than befits decency or propriety, and beg them not to exhibit—and, if possible, not to feel — any predisposition against the mesmeric operation. "The reason for this advice is, that, in most magnetizers' opinion, a moral operation may be silently affected by any present moral cause." Guard against excess of heat or cold, continues Deleuze, and take precautions not to be disturbed during the *seance*. Your subject should be seated at his ease, and you opposite to him, but somewhat higher, so that his knees may be between yours, and your feet by the side of his. He should be asked to abandon himself freely to the operation—to think on nothing—not to examine into the effects he may experience—to encourage a hopeful feeling—and not to be alarmed if he experience any momentary inconvenience or pain. In perfect self-possession, then take his thumbs between your hands, so that the inside of your thumbs touch the inside of his, and fix your eyes intently on him. Maintain this position from two to five minutes, or till you find a temperature in his thumbs the same as in your own. You now withdraw your hands, expanding them the one out to the right, the other to the left, and turning them so that the inside shall be turned out, and raising them to the level of his head. You then place them on his shoulders, leaving them there about a minute, when you draw them lightly downwards along his arms, to the extremity of his fingers. You repeat this five or six times, turning out your hands, and removing them from his body as they ascend. You now place your hands over his head; hold them there for a moment, and lower them before the face (about an inch away) till you reach the pit of the stomach, where you keep them for about two minutes, the thumbs touching and the fingers stretching round. You then move the hands slowly downwards to the knees, or if you can, conveniently, to the feet. You repeat these passes during the principal part of the time, and may occasionally put your hands behind his back, so that they may descend by the spine, and so come round to his knees. After the first pass, you may cease to put the hands on the head, and pass from the shoulders down the arms, and from the stomach to the knees or feet."

This is, with a few variations, the ordinary mode adopted by magnetisers, and M. Teste considers it the best for beginners. He, however, thinks that absolute contact is unnecessary and hurtful, as distracting attention. He usually stands, instead of sitting; and each time he makes a pass, the hand's dorsal side, faces the subject during the ascension, and its front side during descent.

Mesmerism may be produced by the hand alone. You sit before the subject; you make a few long passes downwards, along the arms and down the body. You then extend for a few minutes the hands, at a few inches from his brow; your hands must not vary much in position, though you may move them a little from left to right, and successively place them in the same attitude behind the head. When the patient sleeps you make passes on the knees and legs. This acts as though the mesmeric power were drawn downwards. This operation frequently causes head-aches, and sometimes a more serious inconvenience.

Another mode of magnetizing is by the eye. This is but another name, according to some writers, for the "fascination" exercised by some animals of prey over their victims, and which was at one time regarded by many with as much incredulity as its higher exemplification is now. This mode of magnetizing requires a quick, penetrating eye, of great *unwinking* power. It rarely succeeds with a subject not previously mesmerised, though M. Teste affirms that once, on a first *seance*, he threw a robust man, 30 years old, and stronger than himself, into a mesmeric sleep, by this plan, in a few minutes. The closer the eye be, it is said, the greater the power.

It is asserted that some persons may be mesmerised by "volition" alone. M. Du-

potet, at the Hôtel Dieu, under M. Husson's eyes, and those of the other physicians of that institution, is said to have thrown a girl into the sleep who was at a considerable distance from him, at a moment, fixed, not by Dupotet, but by the medical assistants, who denied the possibility. This was in 1826.

Enough to stamp mesmerism with the name of an important fact in psychological science, and one above all things worthy of the medical man's investigation, is the fact that it offers us the startling circumstance of one man throwing another into a fast sleep of a peculiar kind without narcotics, without physical fatigue, without mental pain, and this, too, though he has but just risen from a plentiful and most refreshing sleep. If this be truth, it would be a disgrace to our profession, and an everlasting stigma, worse than that we have received for our opposition to Harvey and Jenner, if we allowed mesmerism to be made the tool of empirics—who know how to take advantage of good instruments to bad uses—by haughtily disdaining to examine into its nature, and to avail ourselves of its resources, if it have any. To ascertain this last fact, WE MUST EXPERIMENT—and it is to stimulate experiment, by furnishing the elementary knowledge necessary to it that I have sent you this paper, which if received with favor by yourself and the public shall be followed by others.

NICODEMUS.

PERISCOPE OF THE WEEK.

(Dublin Journal of Medical Science; London and Edinburgh Medical Journal; Journal de Chimie Medicale; Vuertembergischen Correspondenz Blatt; Hufeland's Journal; American Journal of the Medical Sciences; Annalen der Chemie und Pharmacie; Lancet.)

POPLITEAL ANEURISM CURED BY PRESSURE.—A man 55 years of age, was admitted into Stevens' Hospital, under Mr. Cusack, with popliteal aneurism of the left leg, apparently of only a few days' duration. He had been in the habit of carrying heavy burdens up a ladder: and had had cough and palpitation of the heart since an attack of fever in the previous autumn. On examination there was a tumour in the lower angle of the left ham in the course of the popliteal artery, about the size of a hen's egg; it was elastic, and pulsated synchronously, but more powerfully than the heart; moderate pressure on the femoral artery stopped the pulsations and emptied the tumor, so that it could scarcely be felt; the skin was not discoloured, nor was the tumor tender on pressure, except at a point on each side, the size of the top of the finger: a distinct bruit could be heard in it; the anterior and posterior tibial arteries could not be felt in either foot; the vessels that could be felt appeared to be large, and to have very thin coats; no morbid sound could be detected in the heart, but its impulse was weak, and the pulsations intermittent and irregular: the pulse 70, small and irregular, varying at times from 60 to 90 without any apparent cause. The left lung was emphysematous: temperature of both limbs much the same. An instrument employed by Dr. Hutton of Richmond Hospital for the treatment of such cases by compression was at first employed, but its use could not be persisted in, on account of the annoying symptoms it produced, the chief being pain and a sensation of a rush of blood to the head. Sir P. Crampton's instrument, modified by Mr. Davy, was then had recourse to, so as merely to lessen the impulse in the aneurism: no compress or bandage was put on the tumour. This instrument, which was borne better than the other, was applied March the 16th, and by the 22nd, the tumour was decidedly smaller and harder, and the impulse greatly lessened: on the 25th the instrument was removed. The swelling gradually decreased after this, and on the 14th of April the final report was that the tumour could be grasped with facility; the enlarged artery had become very small, while the popliteal of the affected limb pulsated as strongly as that of the sound one; a number of hard cords could be felt passing over the tumour. The palpitations of the heart still continued, and the pulse was intermittent. The case of which we have just given an abstract, can hardly be considered a fit case either for an operation or for compression, and we should have regarded a surgeon as highly culpable who adopted the former mode of proceeding for the removal of aneurism in a man, whose entire circulatory apparatus shewed such strong marks of disease. Compression, which has apparently succeeded, can hardly be said to have been adapted for such a case, as was indeed proved by the severe symptoms excited, when complete arrest of the circulation in the vessel was enforced. The partial diminution of the impulsion of blood, which appears to have effected a cure in an exceedingly short space of time, was the only surgical plan which offered a chance of relief, but we much fear from the attendant symptoms that the disease will return in some other vessel, and probably that the poor man will die suddenly from disease of the heart. It certainly is not a fair case to test a new surgical proceeding, nor the revival of an old one. A better case occurred under Dr. Hutton's care previously at the Richmond Hospital, in the person of a labourer, 30 years of age, who had popliteal aneurism of the right ham, for which he refused to be operated on Dr. Hutton applied an instrument which had been constructed for the suppression of secondary hæmorrhage, and which was so contrived as to admit of pressure being made by a screw and pad upon the course of the femoral artery, and the counterpressure upon the opposite surface of the limb without interfering with the collateral circulation—compression was at first exercised upon the artery in the middle third of the thigh, but it could not be borne there, and it was afterwards transferred to the upper part of the vessel, as it passes from the pelvis from under Poupart's ligament. Pressure was exerted for a few hours at a time: in the course of a few days, the tumour felt more solid, and the purring thrill felt on the re-entrance of the blood into the sac was no longer evident. By the 16th day, the report was, no pulsation could be felt in the tumour, which had decreased in size, and was solid: three days afterwards the use of the instrument was discontinued, the femoral artery pulsating naturally. The man was discharged a month afterwards, the tumour being then reduced to the size of a small walnut and feeling very hard. The editors of the Dublin Journal remarking on this proceeding, observe that it has been abandoned too hastily by the profession, probably from the compression employed being so excessive as to render it quite insupportable to the patient.—We remember a case that we watched carefully at the Hotel Dieu at Rouen in 1827, which strongly corroborates this remark: the only effect produced by the instrument was sloughing and ulceration of the parts compressed, and the use of the instrument was finally abandoned. The least possible pressure which may be sufficient to close the vessel should be used; when this cannot be sustained, it will prove of use to partially compress the artery, so as to lessen the impulse of the circulation. In cases when the aneurismal diathesis exists, this treatment would seem to be demanded before recourse be had to an operation.

THE SECOND SOUND IN ANEURISM.—Professor Henderson of the University of Edinburgh, in the course of a clinical lecture on aortic aneurism, mentions that in a paper on substernal aneurism, published in 1835, he related a case in which it appeared to him that a murmur which followed the diastole of the sac, and therefore occurred simultaneously with the second sound of the heart, was produced by the reflux of the blood from the sac into the aorta. Previous to that period no similar observation had been made, but it was afterwards alluded to both by Dr. Hope and Dr. Williams. In further illustration of the remark, he describes the case of Mrs. Cameron, aged 50, in whom the symptoms followed sudden grief resulting from the death of two of her sons. She stated that, on receiving that intelligence, she fell into violent hysterical fits, and continued afterwards in a state of almost uninterrupted unconsciousness for about three weeks, and that, on her recovery from that state, she was for the first time sensible of an unusual pulsation at the upper part of the left side of her chest in front, which she described as having gradually ascended as high as the clavicle. It was only after it had been noticed to have attained the latter situation, that she experienced any considerable pain in the seat of the pulsation, and suffered from difficulty in breathing. Active exertion, and more especially the exertion of ascending a stair, produced, after that event so much difficulty in breathing, that she often felt a danger of suffocation. A short time previous to her admission the pain under the left clavicle had become much aggravated, and had been apt to recur in violent paroxysms, on which occasions it darted acutely towards the left shoulder, and prevented free inspiration. The superior part of the left side of the chest, in front, was rather more prominent than the corresponding part of the opposite side, and the left clavicle was somewhat elevated, and pushed forwards, rising and fallen in correspondence with the systole and diastole of the heart. On examination, the left clavicle was seen to project considerably at its sternal extremity, the contiguous part of the sternum presenting a nearly equal prominence. The rounded margin of a pulsating tumour was felt at the inner edge of the right sterno-mastoid muscle, having its highest point an inch above the sternum. A powerful impulse was felt by the hand, all over a space extending from the right side of the upper fourth of the sternum, and towards the left, nearly as far as the axilla, and from above the clavicle down to the space between the second and third ribs. The percussion-sound is dull over a space included nearly within the same limits. There are two murmurs on the area thus defined, particularly and remarkably loud and superficial on the second left cartilage. The second of these sounds is the more prolonged, and it is of a whizzing character. Below the level of the second rib, this second murmur decreases in intensity, and on the space corresponding to the ventricles, or on the 4th and 5th left cartilages, it is supplanted by the second sound of the heart, clear, loud, and pure, or destitute of the character of a murmur. The first sound, as heard over the heart, is still roughish, though much less so than higher up. On extending the examination away from the seat of the impulse on either side, the intensity of the murmurs also decreases, and towards the scapular half of the right clavicle, the second murmur is feeble, and, heard above it, or louder than it, there can at that place, be distinguished the clear second sound of the heart. Posteriorly the murmurs are not audible, but the clear pure second sound of the heart is very distinctly heard even

on the right side of this aspect; and with remarkable intensity at its upper part. The pulse was 74 and regular, and there was not any increased length of the interval between the impulse of the heart, and the diastole of the radial artery. The impulse of the heart was moderate.—From the symptoms and the physical signs just detailed, Dr. Henderson came to the conclusion that the aneurism would be found to have a communication with the aorta of small size compared with the area of the sac, and that the aortic valves would be found sufficiently healthy to prevent regurgitation of blood into the ventricle. He judged so because in certain situations the second sound of the heart was heard singularly clear, loud, and pure, which could not have been the case if regurgitation into the ventricles had taken place, and in that event, it would have been as impossible, by the study of the sounds at least, to have determined whether the second murmur was produced at the opening of the aneurism, or at the mouth of the aorta alone, as it was certain, in the actual state of the second sound created at the latter situation, that the second murmur heard on and around the pulsating prominence really proceeded from the aneurism. This opinion was fully confirmed on the examination of the body after death, when the inner surface of the aorta, chiefly externally to the lining membrane, was found to be covered with calcareous and steatomatous patches. In front of the left subclavian artery, there was a circular opening leading into an aneurismal sac, the diameter of the opening being 13-8ths of an inch, and its margins smooth and polished. The walls of the sac did not spring immediately from the edges of the opening, but between the latter and the points at which the walls of the sac rose from the vessel, a thin firm rim, nearly half an inch broad, projected. The sac had a globular figure, and from one side of the opening to the other over the summit of the aneurism it measured eight inches. Its inner surface was lined by a layer of firm fibrine, and its cavity filled by a soft and partially decolorized coagulum. The aortic and pulmonic semilunar valves were healthy, and quite adequate to their function; the others valves and chambers of the heart presented nothing unusual. From the details of this case, we may gather a fact of importance and practical value, that we can sometimes clearly ascertain when an aneurism has a narrow communication with the aorta, and also the state of competency of the aortic valves. In a case of aneurism of the innominata, if it can be clearly diagnosticated that these valves are in a healthy state, and the opening into the sac is comparatively small, the question of ligature of the vessel on the distal side of the aneurism may be fairly entertained, as the aneurism would be in a condition favorable to the formation of coagula preparatory and essential to its obliteration. If however an incompetent state of the aortic valves be discovered, the question of an operation could not for a moment be entertained. This condition of these valves, Dr. Henderson remarks is especially indicated by a more or less remarkable increase of the interval which occurs between the beat of the heart and the diastole of a remote artery, the radial for instance. When the aortic valves are insufficient to prevent regurgitation into the left ventricle, the large arteries pour so much of their contents back into the ventricle, that the next wave of blood from the latter finds them flaccid, and in consequence of this, the impetus it communicates to the blood in the whole arterial tree, cannot be so speedily transmitted as when the arteries are kept in a distended condition, and therefore the pulse of the arteries occurs with a more than usual amount of succession or interval, great in proportion to the distance of the vessel examined from the heart. In many instances the interval is so much prolonged, that the heart and the radial artery seem to beat with a distinct alternation; and often a very decided interval may be also distinguished between the pulsations of the latter vessel and of the large arteries near the heart, such as the carotids.

Blepharoplasty.—The restoration of a partially lost eyelid, or the reconstruction of a new one is required in very bad cases of ectropion, or in extensive destruction of the parts from a burn, scrophulous ulceration, carbuncles, or erysipelas. When the entire eyelid is lost, it must be supplied by transferring in front of the ball a portion of the surrounding integuments, by which means the deformity will be diminished and the eye protected, but the newly formed covering can have no action as an eyelid, and if it be the upper one, will hang like a mere membranous curtain in front of the ball; if it be the lower, in which there is usually but little movement, the operation will be far more satisfactory. Dr. Pancoast operated in March, 1839, in a case in which the lower eyelid had been partially destroyed and drawn out of its place by scrophulous disease. The patient, a colored woman, 33 years of age, had a rugous mottled cicatrix, extending from the upper part of the concha of the ear to the base of the jaw, and from the outer canthus of the eye to the upper extremity of the sterno-cleido-mastoid muscle. The ulcerated surface closed, as in a burn, with a great retraction of the healthy skin. The external canthus was drawn outwards and downwards; the upper lid was shortened, and held nearly immoveable over more than the upper half of the orbit. The lower lid was drawn outwards and downwards, so that the external two-thirds of its mucous covering, rendered rough and fungous by the exposure, was stretched over the margin of the orbit, so as to become the covering to the malar bone. The internal third of the lid was thrown forwards upon the cheek, by the diseased and thickened fold of conjunctiva behind it. There was a constant discharge of the lacrymal fluid mixed with pus. The cornea had become hazy, and vision imperfect;—the operation was performed in the following manner:—the V incision of Sir W. Adams was made through the substance of the lid. The rounded and protuberant conjunctiva was removed with the hook and scissors, up to the inner canthus of the eye. The lower lid was loosened from its morbid attachment to the margin of the orbit, and an attempt made as in ordinary tarsoraphy, to bring the divided edges of the lid together, but this could not be accomplished in consequence of the exceeding tension with which the integuments were held down by the cicatrix. Two crescentic incisions were then made, each about three-fourths of an inch long, from the lower apex of the division of the lids: one sweeping upwards and forwards towards the eyebrows, the other downwards and forwards towards the nostril. The triangular portions of skin and subcutaneous tissue were loosened with a few strokes of the scalpel, the upper lid pushed up to its proper level, and the two flaps drawn upwards and forwards upon the ball of the eye, and fastened together with two of Dieffenbach's sutures. The lid was completely restored. The elliptical wound which was left was nearly closed by a hare-lip pin and a strip of adhesive plaster. Some tumefaction and suppuration followed, but by the use of adhesive straps, mild astringent lotions, and a gentle compressing bandage, the cure was completed in 16 days. The lid retained its position, and was perfectly natural in appearance, with the exception of a slight tendency to eversion at the outer canthus, caused by the failure to procure union by the first intention in the elliptical wound, and the contraction which necessarily followed its cicatrization. An equally important operation was performed by the same clever surgeon in a similar case caused by gangenerous erysipelas of the left side of the face. The proceeding was eminently successful.

Malignant Tumour.—Mr. Macilwain narrates the case of a female, 34 years of age, who was sent to him by Mr. Kingdon, having a very hard tumor in the centre of the upper lip, occupying one-third thereof. It had a very firm and well-defined boundary, was of a circular form, and though deeply imbedded in the substance of the part, was very moveable. The lower surface was denuded of its integuments, appearing excoriated rather than ulcerated; it was exquisitively sensitive. The patient appeared much out of health; a bilious, dull, leaden complexion was accompanied by deficient appetite, irregular and painful menstruation, torpid bowels, cold skin, pain in the head, &c. Mr. Macilwain, although at the time he thought that excision only could be of service, believing the liver, skin, and uterus in fault, had recourse to a careful medication and diet; as the patient's health improved, the tumour assumed a more kindly character, and finally disappeared. The medicines taken were aloes, antimony, or ipecacuana, and confection of opium, in different modifications, and doses according to her condition, and now and then, but rarely, a single dose of calomel and confection of opium. Besides these, until the skin acted normally, nitrate of potash, with sarsaparilla, were given to act upon the kidneys. She was to take daily exercise, and to have the skin well rubbed. She also in the course of the treatment had a tartar-emetic plaster applied to the pubes, which appeared an useful auxiliary in restoring a more healthy condition of the catamenia. The whole treatment lasted six months. At first her looks began to improve, then her functions to become more regular, and at length alterations were observed in the tumor, first a softening, and subsequently a diminution of its bulk The absorption continued slowly but progressively, until the whole tumor had disappeared. The result of this and other cases having convinced Mr. Macilwain that tumors not distinguishable from those of the most malignant character may be sometimes absorbed by the same power of the economy which deposited them. The details of the caseare verified by Mr. Kingdon.

Action of Chlorine on the Carburet of Sulphur.—The action of these bodies on each other being but imperfectly known, and no researches having been published in which their reciprocal influence at elevated temperatures was alluded to, M. Kolb at the desire of Professor Wöhler, undertook a series of experiments to resolve the question. He passed a current of very dry chlorine into a vessel containing carburet of sulphur, which volatilized in the gas: he then passed the two gases mixed together through a porcelain tube, full of pieces of porcelain to increase the surface, which he made red-hot The tube was attached to a refrigerating and condensing apparatus, in which he collected a red-yellow liquid, having the odor of the chloruret of sulphur, in greater quantity than that of the carburet of sulphur employed. There was not any other product formed, nor was there any carbon separated in the porcelain tube. This liquid was a mixture

of the chloruret of sulphur and the perchloride of carbon. Water decomposes it gradually into sulphur, sulphurous acid, hydrochloric acid, and perchloride of carbon, which separates in the form of a colourless heavy liquid, not miscible with water. In order to obtain it, the better plan is to add gradually to the mixture, so as not to cause any elevation of the temperature, the solution of potass or milk of lime in excess; to leave the whole in contact for a certain time, shaking it frequently, and then distil it. The perchloride of carbon will come over in a state of purity, and may thus be easily obtained in as large a quantity as can be desired. The chlorine must be perfectly dry, because the presence of water causes the formation of a crystaline volatile body, which may be regarded as a compound of chloroxide of carbon with the chlorhypo-sulphurous acid. It is not necessary to heat the carburet of sulphur, it volatilizes precisely in the proportion in which it is decomposed by the chlorine. If its volatilization is accelerated by heat, part escapes decomposition, and it becomes a long and difficult process to separate it from the perchloride of carbon: the treatment by caustic potass however is the best mode of proceeding. The perchloride of carbon contains 7·9 per cent. of carbon and 92·1 per cent. of chlorine. Its symbols are $C. Cl_4$.—Thus at a high temperature, chlorine takes the sulphur from the sulphide of carbon, and the carbon combines with an equivalent quantity of chlorine. The action is not the same at the ordinary temperature. If some scruples of carburet of sulphur are poured into a large flask full of carefully dried gazeous chlorine, then hermetically sealed up, and set aside for some days or weeks in the dark, or in the sun-light, it matters not which, the colour of the chlorine disappears gradually, and the carburet of sulphur is changed into a deep yellow liquid, a mixture of chloruret of sulphur and of a new combination, hitherto unknown, of carbon, sulphur, and chlorine, in such atomic proportions that it may be considered as it were a chloroxide of carbon, in which the atoms of oxygen have been replaced by sulphur. Water decomposes it, causing on the one hand, a separation of the products of the decomposition of the chloruret of sulphur, and on the other of the new combination in the form of an oleaginous body. This may be isolated and freed from the acids that have formed by repeated distillations with water and a little magnesia, but the best mode of procuring it is to set aside for several weeks, shaking it frequently, carburet of sulphur with the mixture for obtaining nascent chlorine (i. e. peroxyde of manganese and hydrochloric acid) in a vessel hermetically closed, and afterwards subject the mass to distillation. The same body is also formed with the simultaneous production of hydrochloric acid; if the vapour of the per-chloride of carbon with sulphuretted hydrogen is passed through a glass tube raised to a moderate red heat. It is a yellow liquid, not miscible with water, of a peculiar strong odor, very irritating to the eyes. Its specific gravity is 1·46; its boiling point 158 degrees Faht., but these numbers are probably not quite exact. It is not decomposed by water, nor acids, not even fuming nitric acid. The solution of caustic potass slowly decomposes it, giving rise to the formation of an alcaline carbonate and sulphuret, as well as to a separation of colorless perchloride of carbon. The action of dry ammoniacal gas and alcohol will form the subject of an especial investigation. By analysis this body is found to consist of carbon 10·72, chlorine 56·76 and sulphur 32·16, but it is impossible at present to fix the numbers of its ultimate composition, as it is probable that it contains a small proportion of carburet of sulphur. If M. Kolbe's opinion be correct, this body is a combination of sulphur analogous to the chloroxyde of carbon, and its composition may be expressed by the formula $C. S. Cl_2$. In order to its formation, the chlorine will have taken from the sulphide of carbon half its proportion of sulphur, and have replaced it by one equivalent of chlorine. If however the decomposition takes place in the same manner as at a high temperature, (when consequently all the sulphur is removed,) with the single difference that the chloride of carbon enters into combination with one equivalent of undecomposed carburet of sulphur, then the preceding formula must be doubled, and it must be considered as a combination of hyperchloride of carbon with sulphide of carbon$=C. Cl_4 + C. S_2$. This latter tallies best with the explanation of its decomposition by the alcalies.

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London: Printed and Published by JAMES ANGERSTEIN CARFRAE. 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex,—July 8, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 199. Vol. VIII. LONDON, SATURDAY, JULY 15, 1843. PRICE FOURPENCE. Stamped Edition 5d.

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SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE IV.

ETIOLOGY AND NOSOLOGY.

Or an analytical and synthetical research into the natural causes whence disease emanates. (*Morbiparous causes.*)—Health being the normal condition of an incessant organization and continual development, disease, which is the opposite state, can only be defined by a negation, or an equivalent to a negation: it is a disturbance occurring in the functions of some one of our organs, or in the whole of them; it is a partial arrestation of development and of organization,—the symptoms of which are shown in the pain or suffering;—the effect, in the vital contagion;—and the termination, in death, that is to say in the arrestation of all development; a termination the germ of which is often derived from the smallest of its parts. Disease is a partial death, for it is the disorganization of some one of the elementary organs of the general organ, which we call the *individual*. If a cell be diseased, that is to say disturbed in its functions, it quickly becomes disorganized and struck with death. If the ravage be confined to this one cell, the individual is but slightly affected; he is warned of the presence of a cause of death only by the gravity of its effects. The subjacent or contiguous cell takes the place of the disorganized cell, which is eventually separated, externally, under the form of epidermis, or under that of mucus upon the internal surfaces; the sound cells are drawn closer together, as it were, in their ranks; and life continues its wonderful circulation, in that admirable creation, which we call an organ. But if, by one of those chances which may be appreciated though not foreseen, the disorganization become gradually communicated from cell to cell; if the first become to its neighbour but the bearer and vehicle of contagion; if it cease to elaborate its organizing juices, and transmits to the neighbouring cell but the products of disorganization and death;—the invasion of the disease extends by contagion, with the rapidity of the circulation proper to the organ of which the infecting cell constitutes a part; and to prevent death resulting from these movements, so opposed and so contrary to the condition of health, it becomes necessary that the influence, both of art and of nature, be called into action, so as to cut off the organic communications between the invading focus of infection, and the adjacent portions of the organization; otherwise, this minute point, which has become attacked by disorder, will be the commencement of a general disorganization.

For art thus to be enabled to overcome the disease, we must learn its seat and its nature. Now, the seat may be appreciated by the aid of the senses; the nature, that is to say, the cause of the evil, may more frequently be conjectured than appreciated. The seat of the disease is revealed by signs or symptoms, by phenomena of coloration, or modifications in form, which strike the notice; by alterations, which are appreciable to the touch; by various sounds perceptible to the hearing, and the vibrations of which are characteristic of the progress and extent of the disease. The patient is warned of the danger which menaces him, by that feeling of pain, which attends superficial affections, and by the suffering which is symptomatic of deeper-seated disease;—a pain, which is sharp and acute, but transitory, in affections seated at the surface of organs, but which is of a deep character, intense and lasting, in those diseases which attack the seat and centre of the organization. Pain and suffering thus seem to be two conditions which nature has imposed on the gift of life, as if she wished to force us to live, by surrounding death with a host of sufferings. For, if it were possible that the disease which glides through our organs, could reveal itself to us but by symptoms of pleasure, or even of indifference, might it not come to pass, that the human species, to whom the past presents nothing but regrets, the present but pains, and the future but doubts and fears; might it not happen, I say, that the human species would suffer itself to become extinct, if death were pleasant, or even easy of endurance? But suffering and pain being the ordinary consequences of the natural laws, nature herself teaches us to combat them with all our power and intelligence; to call to our aid the experience of those who have gone before us in the path of suffering, and to avail ourselves of the wisdom of those learned men who, by the power and genius of observation, have transformed the data of experience into that system which constitutes the healing art. Medicine has made immense progress towards the knowledge of the effects of diseases; but since the time of Asclepiades and Hippocrates, it can hardly be said to have advanced a single step towards the more perfect knowledge of their true causes.

These causes will, then, form the especial object of our research in this work. After having enumerated and specified the nature of the causes of disease, by an entirely new mode of investigation, we shall, in the second section, proceed to compare the effects described in the present treatises on disease, with the causes which we shall have assigned to them in the first section; so as to show that there is not a single species of disease, which cannot be attributed to some one of the causes which we shall have enumerated. Now, as medicine has, to the present day, been in reality confined to the study and the classification of the effects of disease, this second part will be, so to speak, the synonyme of our classification by its causes.

FIRST SECTION.

Analytical study of the natural causes of diseases. (*Etiology.*)—Disease having its point of origin in the elementary cell, the organization and functions of which are in all respects an exact counter-part on a minute scale of the general organization; nothing can be more proper to simplify a work of classification and systematic division, than to take the elementary cell as the basis of division. Now, we have shown that the elementary cell is an organ (or vesicular crystallization) endowed with the property of elaborating into liquids the gases which it inspires; of combining into new tissues parts similar to itself, liquids which it has elaborated or those which it has absorbed; lastly, of exhaling the gases and exuding the liquids which it has deprived of the elements necessary to its elaboration. It is then evident that to classify those causes capable of originating disturbance in the functions of the individual; we have merely to classify the causes which possess the power of deranging the functions of the cell. The cell being organized so as to form a part, whether of the tissues which preside over the physical movements, muscular or circulatory, or of the tissues of that mysterious order in which reside perception and thought,—two acts from the combination of which emanates will; it results that we may in the first place class the causes of disease into PHYSICAL CAUSES and MORAL CAUSES. As to the PHYSICAL CAUSES, they proceed to their work of disorder and death: either, by intercepting the materials destined to aspiration or absorption, (*which are thus causes of privation and subtraction, privative causes*); or by introducing into the cell, through the medium of the aspiration or of absorption, the germs of decomposition to the liquids, and of disorganization to the tissues (*disorganizing causes*); or lastly, there are causes which destroy the vesicular unity, by solutions of continuity, and by the introduction, into the cavity of the cell, of coarse liquids which could only be suited to the elaboration of the vesicular organ after a species of election or choice (*destructive and traumatic causes.*)

FIRST DIVISION.

Physical causes of diseases.—We understand by physical causes of diseases, those causes of which the nature and form are appreciable to our senses, whether immediately and by the direct effect of their characteristic properties, or mediately and by the deductions of reasoning and analogy; such are those causes which may be perceived or exhibited to us, by the sight, the touch, the hearing, the taste or the smell, and which may, by these signs, be remembered or recognized under whatever form. The moral causes, on the contrary, are those which, for want of a sixth sense sufficiently refined to be capable of perceiving so subtile and so ethereal an essence, our terrestrial and imperfect nature can have no idea of but by the image of their effects. We have thus two categories of causes equally powerful, and equally active, and which, according to circumstances, may produce upon the organic economy the same results.

The physical causes, as we have already said, may be classed into three principal groups:—1st, the privative causes, or those which intercept the materials necessary to elaboration;—2d, the disorganizing causes, that is to say those which, by their chemical action, decompose the organizing liquids, or disorganize the walls of the cellular membrane; 3d, lastly, the causes destructive of the substance and form of the tissues (*mechanical causes*); this latter division includes those causes which, by a solution of continuity, affect the unity of the cell, and cut, as it were, asunder the thread of its elaboration, or else transform it into an elaboration of another character.

Privative causes of disease, or causes which act, by intercepting the materials necessary to the elaboration of the organized cell.—The cell, that element of every organized tissue, that germ of all organic development, can only, as we have said, elaborate and reproduce cells of the same nature as itself, by absorbing gases which it transforms into liquids,—liquids which it combines with salts so as to form tissues. But this special elaboration can take place only within the limits of a certain temperature, below or above which, it meets with death from congelation of the liquids or death from disorganization of the tissues. We shall distinguish three principal kinds of privative causes of disease: the causes which act by intercepting the gases, *pneumatic* or *respiratory causes*; the causes which act by intercepting the nutritive liquids, *dietetic* or *digestive causes*; and the causes which act by lowering or by elevating the temperature, *thermanic causes*

FIRST KIND.

Pneumatic causes of diseases.—The atmospheric air, that is to say the gaseous element, in the centre of which the earth is suspended,—this air is the medium and the principle of all organization. The plant and the animal absorb it, assimilate it to themselves, elaborate it and expire it; however simple may be the structure of the species, from

the monad, that animal point or speck which moves in a drop of water as in an ocean; from the *byssus parietina*, that vegetable globule which propagates itself by globules of a similar character, and covers our walls with verdure, by joining end to end its infinitely small generations, up to the elephant and the whale, those two colossi of the land and sea, both in power and in bulk, or lastly up to man, that much more wonderful colossus in the power of his intelligence,—every organized being ceases to live, from the moment that it ceases to respire the surrounding air. Respiration is composed of two acts, the one being inseparable from the other; the one by which the organized cell aspires the air which it is to elaborate (*inspiration*), and the other by which it expels from its interior the air which it has deprived of its assimilable principles (*expiration*). It is evident that the closed and imperforate cell can neither inspire, nor expire constantly; in the first case, it would burst; in the second, it would become exhausted. The regular performance of its special elaboration requires that these two functions should alternate one with another, and follow, in their movements, a species of rhythm, which is the sign as well as the regulator of the state of health,—the normal state of the individual.

The eudiometric analysis of the atmospheric air shows a certain invariableness and a certain uniformity in its constituent principles, at whatever part of the earth, or at whatever elevation, the air, which is made the subject of observation, may be taken. From this analysis we find that atmospheric air is a constant mixture or combination of 21 parts of oxygen and 79 parts of nitrogen by weight, besides a variable quantity of watery vapour, and an infinitely small quantity of carbonic acid, varying, however, still more than the former in quantity. We may undoubtedly consider this analytical composition, as representing the normal state of the atmospheric air, that condition which suffices and which is most suitable to organical development. But it is repugnant to reason and to observation, to admit it as the constant and invariable state of a medium which is every instant the receptacle of so many and so various emanations of gases; analysis, here, with all its exactitude and precision, runs counter to analogy. How suppose, in fact, that the air of a theatre could, during a performance,be as simple in its composition as that surrounding an open lawn? Is it not an absurdity to admit that the air which we respire upon the borders of a marsh, at the period when its miasms are engendering fever, can be composed only of those four elements which we respire elsewhere for the maintenance of our general health? What then becomes of all those emanations of ammonia, of phosphorus, of sulphur,&c.,which are discharged into the air by our numerous iron-works, our manufactories, our closets, and our sewers,—of all the products of fermentation and decomposition,—of all the air which is expired and returned to the atmosphere deprived of its oxygen, and impregnated with the vapours exhaled from the respiratory surfaces? How is it that analysis had not discovered these? This arose, perhaps, in the first place, from the circumstance of their not being anticipated; and, in the second place, from the inefficiency of the means employed for this purpose; in fact, the principal modes adopted in the valuation of the respective quantities of oxygen and of nitrogen, were the electric detonation, and the action of phosphorus. In the first case, to the volume of air employed, a quantity of hydrogen superior to 42 parts of this volume was added; detonation was then made to take place in the eudiometer, and the quantity of oxygen directly estimated by the quantity of hydrogen transformed into water; the quantity of nitrogen being estimated by the difference, or else by introducing a piece of phosphorus, to absorb the oxygen, and transform it into phosphoric acid. The gaseous portion *not* absorbed, was considered a mixture of nitrogen and carbonic acid; to absorb this latter, a solution of potash was employed, but the analysis went no further. The volume having been disengaged of its oxygen by the action of phosphorus or by detonation, and of its carbonic acid by potash, was regarded as consisting necessarily of nothing but nitrogen. Now, suppose that the volume of atmospheric air subjected to experiment had contained, in the state of combination or of mixture, other gaseous elements; let us see if, by the above mode of analysis, we should have been able to discover them. A few examples will enable us to understand this question. Let us admit that the air contains a certain quantity of free ammonia; the phosphorus will transform itself into a fixed phosphate of ammonia, by absorbing oxygen at the same time. If the ammonia exist under the form of an alkaline salt with excess of base, the phosphorus being converted into phosphoric acid will fix this salt, by saturating it and transforming it into a double salt with an ammoniacal base. But in either case, this quantity of ammoniacal gas will pass in the calculation for oxygen, unknown to the operator. Suppose, again, that there exist in the air some acid emanation, of whatsoever nature, this acid will pass for carbonic acid, in the trial with potash. Lastly, the gases which the phosphorus and potash shall not have absorbed, sulphuretted and carburetted hydrogen, oxide of carbon, &c., the neutral volatile salts, &c., all these will pass under the head of the nitrogen, the residue of the analysis, and which this mode of analysis may measure, but is unable further to absorb or to decompose.

The atmospheric air is not, consequently, at all times so pure as eudiometric analysis would seem to indicate; undoubtedly the existence of these emanations in the air can neither be permanent nor invariable; for we must admit that the electric power of the solar ray,—that the lightning which cleaves our atmosphere, combines and decomposes in a thousand ways these various elements, already so diversified among themselves; we shall then find a difference in the constitution of the air, as wrought in a state of nature, when compared with that which is effected in our laboratories. The atmospheric air is freed from these accidental ingredients in its composition in various ways: 1. By the rain which washes and purifies it, which becomes impregnated with all that is soluble, and filters into the earth the salts which it had dissolved in the air.—2. By the chemical bases of the soil, on the surface of which are accumulated the heavier particles which the air, so to speak, holds in gaseous solution.—3. Lastly, by the force of the winds, which remove these accessory elementsfrom place to place, disseminating them with inconceivable rapidity, and thus facilitating their decompositions and combinations, by multiplying their points of contact, in consequence of the movement given to the agitated mass. Still, it is perfectly possible that, at a given moment, the air which we breathe may reach our lungs, impregnated with all these gaseous elements, which alter its normal purity.

We will now, then, proceed to the analysis of the air, taking for our data the proportions of oxygen and of nitrogen, those two essential principles of our atmospheric constitution:—nitrogen, 79; oxygen, 21=100. If we bear in mind the exposition of the atomic theory (as given in the *Systeme de Chimie Organique*),we shall have no difficulty in considering the atmospheric air, as a mixture, or rather a combination, of one atom of oxygen and of four atoms of nitrogen, a *compound atom* in which the oxygen is the central, or, as it were, the solar atom, and the four atoms of nitrogen are the satellites, or peripheric atoms. It might be urged that under this view the proportions should be exact; that the analysis should give: of nitrogen, 80; oxygen, 20=100. But we can hardly conceive it probable that analysis should furnish proportional numbers of this nature, without some fractional residue. In fact, we have shown that every gaseous or liquid combination holds in solution a certain quantity of some one of the elements which compose it. The air, which is a combination of one atom of oxygen and four atoms of nitrogen, must, according to this system, necessarily hold in solution some free atoms of oxygen, which become lodged in the interstices of the compound atom, so that the oxygen is the centre of a group of compound atoms, as it is the centre and the sun of a group of simple atoms. We cannot however say the same of the nitrogen, which is found at the periphery only; for the atoms cannot, in this system, be central and peripheric at the same time, inasmuch as they are attracted towards each other only by their different natures. It is then this atom of oxygen, which is held in solution, which deranges, in our analytical researches, the relation of the figures, by causing an excess of the oxygen. To reduce this into exact figures, we should represent the composition of the air by the following formula: azote 76, oxygen 19, (quadriazotized oxygen,) oxygen 5, (in solution)=100. But we know, by experiment, that every solution is so much more intense, as the liquid we analyze is at a greater depth, by reason of the laws of gravity. The atmospheric solution can be no exception to this law. We must then admit that the proportion of oxygen becomes progressively lowered, the higher we rise above the level of the sea, and above that of the habitable globe.

We have elsewhere shown how material atoms, all supposed equal in weight, differ one with another in the volume of caloric which surrounds them, and which forms to each a kind of atmosphere. We have explained their respective weights, by showing that the bodies which seem heavier, to our modes of calculation, are those in which the atoms are enveloped with a more feeble layer of caloric, and are, consequently, less distant one from another. Lastly, we have shown that the atoms to which belong the greatest volume of this atmosphere, force towards the centre of the spherical mass resulting from their union, those atoms least abounding in it, and that in the order of their volume. So that, reversing the common notion, we may state that the lighter bodies force inwards the heavier ones, and cause them to gravitate towards the centre of the system which is formed by their union. We shall in our next lecture, demonstrate this subject in as concise a manner as possible.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

We were, in our last lecture, considering the subject of structural diseases of the bronchial tubes and their ramifications, and I have already mentioned the general thickening of the submucous tissues, which sometimes also involves the mucous tissues;—a sort of hypertrophy of the bronchial fibres and of the cellular tissues investing and connecting together the cartilaginous rings of the windpipe. Now, this affection I referred to more particularly, as occurring commonly in old persons or those subject to bronchial disease, in whom it has the effect of impairing considerably the mobility of the lung. I must pass from this subject to that of dilatation of the bronchial tubes, as also of their contraction and obliteration, which, although it may seem extraordinary, are, nevertheless generally connected one with another. The most common effect of dilatation of the bronchial tubes is well described by Laënnec, though he did not successfully point out the causes. Sometimes the bronchial tubes terminate in globular dilatations; the tubes being enlarged and having at the end a kind of cyst or cell. This appears to be one variety. Another variety is where the tube instead of being prolonged, becomes all of a sudden a large cell or sac. A third form of dilatation, is where the tube is dilated along the whole length. The tubes running through the substance of the lung are of a large size, and, in some cases, the solid lung is pervaded by cavities in various conditions, which are found to be bronchial tubes, dilated in various degrees. Now these dilatations are connected with a number of peculiar forms of disease. Difficulty of breathing has been noticed in persons, in whom these dilatations have been found after death; more or less difficulty of breathing, with cough and a great deal of expectoration. Before I consider the symptoms, let us inquire for a few minutes into the pathological causes of these dilatations. Laënnec conceived that these tubes became dilated by the accumulation and increased quantity of mucus or pus

within; this viscid mucus, he supposed to be the cause; and the appearances presented by some of the dilatations, which were found filled with a sort of purulent matter, would, in a great measure, warrant such a supposition. But this, however, seems very insufficient to account for it; there must be something more than a mere accumulation of mucus in these cases, and more probably this accumulation of mucus is the consequence of dilatation rather than its cause. We do not find in other cases, where accumulations take place to a great extent in the bronchial tubes, that they lead to dilatation of the bronchi at all; nor do we find it occur in cases of bronchitis, nor with congestion accompanied by a very soft and copious secretion. Examinations have been made, but not with very satisfactory results. They, however, point it out as being the result of some change or other in the nutrition of the parts. Of this there can be no doubt. This does not in itself explain the nature of the change, but merely that there is some modification in the state of nutrition. There are various modes in which this sort of structural disease may be produced. Perhaps it may take place in this way:—the air having been drawn into the chest so as to fill up the vacuum caused by the act of inspiration, excites these tubes again to contraction, so as to expel the air from the lungs. This pressure is constantly exercised; and if pressure be continued with greater force in some parts of the tubes than in others, these parts will be unable to meet such pressure from their softened and yielding nature, and will, consequently, have a tendency to dilatation. Now, this may take place in cases of prolonged inflammation, as in some cases of bronchitis, without any reference to the quantity of the secretion; for, in some prolonged cases of bronchitis, the tissues, as is frequently the case in inflammation, are softened, or at least rendered less elastic; and at the very same time, too, obstruction may exist to the passage of the air in and out of the lung. Now, suppose that in the act of inspiration, the air shall act with great force upon the walls of the yielding tube, or of that tube which has lost its natural tone of contractility; suppose, too, as is generally the case in the phænomena of bronchitis, that there is thickening at the angles of the tubes, owing either to deposit under the membrane, or to an accumulation of mucus or secretion, either of which will suffice; now, then, under what condition are these tubes during the act of forcible expiration or cough? The air passes freely through the tubes that are unaffected; but in the others it meets with obstruction from their contents. But this is not all, I have met with an original definition given by Dr. Stokes, who considers the chief cause to be the injury that has been done to the elasticity of the tubes. Cases such as I have been mentioning of dilated bronchi, have been known to have succeeded to bronchitis with violent cough, and Laënnec states that the same kind of thing succeeds to hooping cough. The violence of this cough will easily produce one of the elements of dilatation. The most remarkable cases I have met with, are those in which the existence of dilatation was not preceded by any marked cough. Cases of bronchial dilatation have sometimes taken place, where there has been no violent cough; and this is most remarkable, as the dilatation of the bronchial tubes is accompanied by obliteration of the vesicular texture. In this case, Laennec supposed, that the obliteration of the vesicular texture, and the consolidation of the lung, was the result of dilatation of the bronchi,—that the dilatation was the first thing that took place, and owing to the bronchi becoming dilated and pressing on the texture of the lung, it thus became consolidated. This, however, I have found is not the case: obliteration of the texture takes place in a known way; inflammation of the pleura and substance of the lung, accompanied by bronchitis, and pressure of liquid effusion, will do it. The obliteration takes place at the extremities of the tubes, which become dilated in very various manners and degrees. Now, I have said, that dilatation is caused by obliteration; but obliteration is not caused by inflammation of the substance of the lung alone, but by a plastic bronchitis, accompanied by the exudation of lymph, which is not confined to the trachea, or the larger branches, but penetrates also into the smaller bronchial ramifications. Reynaud has pointed out the obliteration of the tubes as part of what he considers plastic bronchitis. Whether this be the true explanation or not, that lesion is certainly in itself capable of producing dilatation of the bronchial tubes. What is the consequence? Suppose the bronchial ramification is surrounded with a number of branches on all sides, distributing themselves to the texture of the lung, and that this texture becomes, some how or other, obliterated, so that each of the tubes is closed—blocked up; the consequence will be that the efforts of respiration and expiration in the chest will be expended on those tubes that are free; the air cannot get any further; it no longer goes into the extremity of the tissue, and it is found that that portion of the lung to which the air has not free access, becomes dispersed, disappears in some way or other, and becomes obliterated. But, certainly, in the greater number of instances, this is produced by the consolidation of the texture of the lung, which becomes, in fact, hepatized; and under these circumstances, not only will it be impossible for the air to enter into this part of the lung, but the texture will become consolidated, and hence there will be increased respiratory action in other parts. Under these circumstances, the effort of expiration is all expended on the sides of the tubes as far as they are open, and the consequence is, their being expanded into large sacs, or dilations of various kinds, so as to fill up the vacuum, and supply the place of the absent vesicular structure; of course, they do not answer the purpose of aerating the blood, on account of their thickness, although they have the effect of partly filling up the chest. You will observe, that obliteration takes place generally in the direction of the tubes. One cause of dilatation may be glanced at, and that is, tubercles: undue rigidity of the chief bronchial ramifications is also another cause which operates, in some degree, to produce dilatation of the air tubes. The bronchial ramifications from this cause cannot extend themselves as usual, and the pressure falls on the vesicular texture; but it often affects the small tubes, and I have not unfrequently found, in cases of emphysema of the lung, resulting from rigidity of the root or apex of the lung, that there have been dilated cells, unaccompanied by consolidation of the texture. You frequently find dilatation of the air tubes arising from such causes.

The symptoms will vary according to the extent of the lesion. You may meet with partial dilatations where there has been no particular disorder; but where they are more considerable, they are accompanied by permanent dyspnœa, sometimes cough, and frequently by a very peculiar kind of expectoration: the matter expectorated is purulent, and sometimes very fœtid. It is a remarkable fact, that in many instances of pulmonary disease, attended with dilated bronchi, the expectoration is very fœtid. Now, the explanation of this is very simple; these dilated tubes, in a great measure, defeat the mode in which expectoration usually takes place. As I have mentioned to you, expectoration takes place, in consequence of the relation of the size of the small tubes to the size of the large ones, and it is forced by the current of air from the small to the large: the large cavities become, as it were, receivers of the sputa or secretion, and if they are not closed, the air has access to them, and the consequence is, that the matter putrifies and exhibits the fœtid character alluded to. There is frequently connected with this a good deal of headache, a state of hectic fever, and a weak and emaciated frame. You do not, however, always find the expectoration to be fœtid. In the more aggravated forms of disease, there are not only these symptoms habitually displayed, with cough and expectoration, but often, also, a considerable amount of impediment to the respiratory function, with the usual symptoms of lividity and cachexia. If this continues long, there is sometimes dropsy from the obstruction to the passage of the blood through the lungs. These latter symptoms generally arise in cases of very extensive dilatation of the bronchi, and they occur as a sequel to pneumonia. In a great number of instances of phthisis, you find a considerable consolidation of the lung commonly associated with the dilatation of the bronchi. It is the consolidation that leads chiefly to this result.

Now, as to the physical signs. With regard to the breathing, you have all the phenomena of bronchial respiration, and the same sort of sounds as are produced over the trachea, or over the ulcerous cavities arising from phthisis. Where the dilatation is circumscribed, the cavernous phœnomena are exceedingly like those of phthisis, and we cannot easily distinguish the one from the other. It more usually takes place in the central and lower portions of the lungs. There is a dullness over the seat of the consolidation, and the respiratory sound is not heard well over the lower part, but when you come here, the sound of tubular respiration is loud enough; there is the sound of the tubular voice—bronchophony, very loud indeed, louder than in most other cases; and this will take place over the whole, or a considerable portion of the side. The sound on percussion, again, is dull; but as you go over the tubes, there is generally a peculiar kind of sound—a tubular sound, sometimes really resembling the sound produced by striking the trachea; in other instances, the sound is a muffled sound, consisting partly of that sound, and partly of the motions of bubbles of liquid in the tubes: it is, in fact, the cracked-pot sound, as Laënnec called it. Now, the great distinction between this condition and that of tuberculated lungs, will be better understood when I come to speak of the latter disease. I may, however, mention that it consists, in a great measure, of consolidation of the lungs, more so than in cases of phthisis. There is more dullness on percussion than in phthisis, compared with the opposite side, which is comparatively healthy, and often free from disease altogether. In dilatation of the bronchi there is frequently a contracted state of the chest, as compared with the sound side. This lesion may sometimes continue stationary for years, without any obvious progress or improvement in the symptoms, with the fœtid sputa, &c., and no material injury be done to the constitution; whereas phthisis, with such an amount of physical change, would readily produce death.

The treatment of this affection can be merely palliative; where this lesion is produced, you may readily suppose that the natural structure is not to be restored, but we may do something to check and reduce the secretion, by giving mineral acids, particularly nitro-muriatic acid. Iodine and creosote are also sometimes useful, and all the remedies applicable to chronic bronchitis, will become eligible here; for, in fact, with dilatation of the tubes there is also more or less of chronic bronchitis; the various modes of external counter-irritation and palliatives, to quiet the cough, may be useful in these cases; but the most important subject for consideration is that of timely checking the lesions from which these affections originate, and thus avoiding these subsequent additions: the original affection should, in fact, be arrested before the system is brought under the influence of the plastic products. A few words on the subject of tumor pressing on the bronchi. Tumors pressing on the chief bronchial ramifications, often cause difficulty of breathing. Tumors of the bronchial glands are not uncommon. In some instances, particularly in children, the bronchial glands may, by acute inflammation, become enlarged, and thus cause some difficulty in breathing. Some children, when affected with colds and coughs, have a wheezing accompanying their breathing for some time afterwards; and, in many instances, this is connected with sonorous respiration, and something approaching to sonorous rhonchus is heard in the inter-scapulary spaces; sometimes more on one side, and sometimes more on the other. In some cases, in which these symptoms were observed, they all went down by the use of anti-phlogistic treatment, combined with iodide of potassium. Looking at the position of the bronchial glands, I have no hesitation in saying that enlargement of the glands in children is capable of causing obstruction of the great tubes. The same thing arises from scrofulous glands, or where the glands become tuberculated. In some cases, more particularly in adults, tumors pressing on the bronchi, or at the root of the

lungs, seem to produce asthmatic paroxysms; and this is especially the case when the tumor is seated either in the mediastinum, or so as to press upon the vessels in the lower part of the neck. These cases are obviously connected with disease of the whole respiratory apparatus: the action of respiration becomes disturbed, not from constriction of the glottis, but from constriction lower down, or from a kind of relation between the muscles of respiration and the nerves that excite them. The signs of this affection are those of permanent pressure on the bronchial tubes, which thus tends partially to close them: there is permanent rhonchus, or imperfect transmission of air through the right lung; if the tumor is considerable there will be signs of displacement, and the tumor may come within reach of the sound on percussion. Sometimes, too, besides the displacement taking place, if the tumor be considerable, the lung will be pushed aside, causing dullness on percussion. We find a remarkable, dull sound in every part of the lung, where the respiratory sound is least. The treatment of this affection must depend on the symptoms; if the case is of the acute kind, and there is some considerable difficulty in breathing, leeches had better be applied; in chronic cases, iodide of potassium, and alkalies, are most efficacious.

We now come to disease of the pleura—the membrane lining the outside of the lung, and the inner surface of the cavity of the chest. We take, in the first instance, inflammation of the pleura, or pleurisy, as a sort of starting point. You will here apply the different remarks I made, under the head of *General Pathology*, on the character of inflammations of serous membranes in general. The symptoms are very characteristic: they are—pain in the side, shivering, followed by fever, a remarkably flushed face, more so than in the generality of diseases; the flushed state of the face is more on one side than the other; the skin is very hot, with the usual symptoms of inflammatory fever; the pulse is very frequent, at first small, afterwards frequent and sharp, and, in most instances, becoming hard. Sometimes the pain precedes the fever, and sometimes the fever precedes the pain; in most cases, the pain precedes the fever. The pain is of a peculiar kind, an acute, cutting pain, or a kind of stitch, occurring low down in the side, that part in which there is most motion of the pleura. Sometimes, it is higher up, and then it shifts to the back. There is a feeling of uneasiness in the chest. The pain is partly confined to an individual spot, in which it is said to be cutting or stabbing. Again, the occurrence of this pain itself, causes a sort of catching in the breath. A full breath, or cough, increases the pain, and thus causes the patient to catch the breath, so as to restrain the action and diminish the pain. This affection is often accompanied by a cough, of a short, hacking nature, which is usually very troublesome and frequently repeated, especially when the pain is sharp. The cough is dry and without expectoration, and it greatly aggravates the pain. You find persons affected with pleurisy, holding their sides continually, to prevent the motions increasing the pain. The fever becomes increased, more or less, in proportion to the pain, and the pulse becomes hard, with the usual symptoms of high inflammatory fever. The pain may be sometimes restrained by holding the side; but if, at the same time, the respiratory efforts are not diminished, the pain will be very much increased; by pressing the diaphragm upwards, and compressing the abdomen, it is sometimes increased, and may be detected in this way, when it is not otherwise present. The tenderness, externally, is sometimes merely superficial; but what is worse, is that there may be no pain at all—no cough—the fever may be absent—the difficulty of breathing entirely wanting, and yet pleurisy may be present in a very bad form. This is one of those cases of acute disease which come on insidiously.

First of all, as to to the physical signs. They are very characteristic, but there are many matters connected with the physical signs of pleurisy that are scarcely worth anything at all. Now, some authors say it is best to lie on the affected side; in many instances it is so. I have seen, again and again, the patients prefer lying on the affected side, which has the effect of restraining the motions of that side; in other instances, the patient lies on the healthy side, and sometimes lies best on the back. The physical signs are connected with the changes that take place in the state of the membrane, and its secretion. You know inflammation of the serous membrane is accompanied very early by effusion. The physical signs may be divided under the following heads; those appreciable by sight, by touch, or by hearing. The diminished sound of respiration on the side affected, apparently arises from the pain, for we do not find any diminution of the sound on percussion. This is the case with pleurodynia, as well as pleurisy: it is not distinctive of pleurisy. The second sound that may occur, is the sound of friction—a slight rustling sound, arising from the friction of a thin coat of lymph on the pulmonary pleura against that of the costal pleura. This is not commonly heard, for it is not a common thing for lymph to be effused so early, without liquid being effused also. The third sign observed to be present is some dullness on percussion, and, perhaps, a slight degree of diminution of the respiratory sound; but this is very doubtful. When there is the first indication of dullness on percussion, I do not believe there is any perceptible diminution of the respiratory sound. The character of the dullness varies; in some instances, it is chiefly in the lowest part; in fact, there is always a great amount of dullness in the lowest part of the chest. The amount differs. Dr. Walshe has described it as being spread all over the chest, the effusion of liquid spreading over the whole surface of the lung, before any considerable crepitation takes place. In every case that I have met with, there has always been more dullness in the lower part of the chest than in the upper; and as the disease advances, the dullness increases more and more in the lower part of the chest, while the sound improves in the upper regions in consequence of the production of crepitation.

OBSERVATIONS ON QUINA.

By Dr. DON CELESTINO MUTIS, Commissioned by the King of Spain for this and other important objects concerning the Botany of South America.

Translated from the Original Manuscript by Colonel R. WRIGHT, Diplom. Agent for the State of the Equator.

About a century and a half have elapsed since the first introduction of quina into Europe, and up to the present day its proper application and different species remain unknown; nor are men of science agreed as to its virtues and effects: cried up by some as an universal remedy for all ailments, it has been almost wholly condemned by others—all at the same time claiming infallibility in their several opinions as the result of their respective experience. This difference of opinion maintained for so long a period by men, many of them of great celebrity, has its origin in *ignorance*, arising from the following facts.

So soon as the Spaniards became aware of the efficacy of the quina used by the Indians in intermittent calentures, they brought it to Europe, where its wonderful effects gave it its proper estimation and value. Sought after by all nations, it soon became an object of commercial speculation, as well as a succour to afflicted humanity. It was not the benefit of his fellow creatures that actuated the merchant who imported, or the farmer who gathered it; therefore, although in the selection of the *bark* the farmers proceeded honestly, so long as they found in abundance the same species of the primitive trees, they were so careless in preparing it for embarkation, that it quickly got damaged, and losing its virtues, failed to produce the usual favourable effects, often to the serious loss of the merchant. This was the least evil; for the trees of the primitive quina becoming scarce, the farmer availed himself of other resources, which have caused the incertitude that yet exists.

At first the farmer, to save time and labour, only stripped off the bark from the trunk of the tree as high up as he could conveniently reach—afterwards the want of trees obliged him to fell the plant, in order to come at and peel the branches: this operation produced him a second advantage, for the trunk, sprouting afresh, yielded him a further supply from the young shoots, and by this means were introduced the several kinds called *cortesones* (*i. e.* massive bark) and *canutillos*, (quill bark,) the respective efficacy attributable to each, maintaining hitherto divided the opinions of the farmer, the merchant, the chemist, and the physician.

Believing there were no more trees of this kind to be found but in the mountains of *Loxa*, where the Indians first pointed it out, and the quantities gathered there bearing no proportion to the demand for it in Europe, they determined on peeling other trees, which, although closely resembling, and of the family of the *quinas*, and indirectly febrifuge, were not always efficacious, nor their effects the same; hence the contradiction and labyrinth of opinions introducing so much confusion. Physicians, not knowing that the *quinas* which they administered were of *distinct species*, attributed to other causes the different effects which they witnessed; hence the doubts as to the legitimate kind, and the various methods of distinguishing it, which, originating in error, the rejection or approval of the various barks became quite an affair of caprice.

The *quina naranjada* (orange coloured bark) which was the primitive, was succeeded by the *quina roja* and *amarilla* (the red and yellow bark) and other species which were rejected. These kinds were frequently sent mixed. The marks by which they were recognised and examined were very equivocal. Sometimes the bark was approved of on account of its thickness and massiveness, coming from the trunk of the tree; subsequently preference was given to the branch or quill bark (canutilla). This kind also lost its credit; the colour and cracks of the inside had the same fate. At one time the red was in favour, but was soon condemned and replaced by the yellow; both these were thrown aside in turn, according to the prevalent opinion of the day. Every one asked for the *good bark of Loxa*, and from Loxa it was sent. Neither the planter nor the merchant knowing what to do, both suffered the consequence of a vaccilating opinion by the severe losses they experienced. Their clamours at length reached the ears of Government, when the affair was considered of sufficient importance to engage its most serious attention, which, although occasionally given to the matter for above fifty years, had failed in obtaining a satisfactory result, in consequence of placing too much confidence in the opinions of advisers incapable of forming a correct judgment on such matters. And to judge from the unsettled state of the research at the present moment, it must be confessed, that if the various measures and dispositions of the government have not augmented the confusion, it would at least have been continued some centuries longer but for the providential interposition of Dr. Celestino Mutis, whose genius and activity developed the mystery, notwithstanding many dangers and difficulties which he had to encounter and overcome, during the space of thirty years devoted to the examination of the nature and qualities of the different trees of *quina* on their native soil.

His first step was to seek out the trees of bark in separate directions and localities—so that at the very commencement of his researches he cleared up the doubts and perplexity which existed as to the woods of Loxa, already nearly exhausted or destroyed, being the only place where *quina* was to be found.

He then directed his attention to the discovery of the origin of the erroneous and conflicting opinions prevalent, and found and classified *seven really distinct species*, which, with their respective varieties, are known by the name of *quina*. He made experiments and observations, and finding in some virtues a greater degree of eminence in their respective kinds, he classified four of them as *officinalis*, distinguishing each by the respective names of *naranjada* (orange), *roja* (red), *amarilla* (yellow), and *blanca* (white),—of whose distinct characters we are now about to treat.

Distinct and general character of the various species of Quina.

Botany demonstrates the real distinction of four officinal species of quina, marked with different characters peculiar to each, and it is evident to reason, that as each species possesses distinct and separate qualities, their virtues should be different, as effect is always in relation to the cause which produces it.

In the examination of the *quina* we should proceed combining the characters presented by the bark to our senses, and of these we should prefer the *sight* and *taste*, because the touch and smell cannot discover in them distinct characters. The larger bark from the trunk is also the most appropriate for examination, particularly at the commencement, as from the smaller kind *canutilla* (*i. e.* quill bark) exact notions might not be deduced.

Each species of *quina* has its own proper colour from a certain juice which dyes it, and is found deposited abundantly, and coagulated amongst the woody fibres of the bark, which, diversely dyed, constantly exhibits on the interior face the respective colour of each species, with some trifling varieties which perplex the inexpert examiner; but this happens only with the *naranjada* (orange) and *amarilla* (yellow)—as the *roja* and *blanca* (red and white) give characters so remarkably distinct that no one can mistake them.

The structure of the bark, which consists in the *web* of the woody fibres that contains the juice, appears in longitudinal lines parallel to each other, and the more or less compactness depends on the closeness or coarseness of the web; the transverse crevices or interstices are also common to every species, which assuredly characterize all the quinas on their surface in so signal a manner, that they cannot be confounded with the bark of any other tree.

The savour of any quina when well chewed, leaves on the palate the bitter impression common to all the species, of a taste so peculiar that it cannot be mistaken or confounded with the innumerable bitters of other plants. In its *genus* there are also some differences, and a determinate savour is peculiar to and characteristic of each species.

From the combination of characters supplied by the sight and taste, should result the distinction, by principles more sure than those hitherto employed. There are no other means, and if this be wanting, every examination of the bark will be based on error; the different species remaining confounded one with another as has happened up to the present.

Particular characters of each species.

The *quina naranjada* (orange bark) is known by these thirteen characters:

1. The bark, very dry, presents its interior surface of a deep yellow colour inclining to fallow.
2. When wet with water and compared with the dry, it shews a proper fallow colour.
3. Reduced to powder it does not lose its colour, but rather augments it, remains uniform, and in a better state for comparison with the other species.
4. One ounce of powder in cold infusion in twelve ounces of rain-water after twenty-four hours gives a thin tincture, nearly without froth, of a fallow colour like the *bark* when wet; of an active bitter, and this of its species; and with a sediment of all the powder more highly coloured than the dry.
5. The same infusion, with two ounces of water just beginning to boil added, gives in twenty-four hours a stronger tincture, without froth, higher coloured than the first, of a more active bitter, and sediment the same as the first.
6. One ounce of powder in cold infusion in two ounces of spirit of wine, gives in twenty-four hours a strong tincture, without froth, of a fallow colour like that of the boiled tincture, of an active bitter, and sediment like the foregoing.
7. The rind chewed; the bitter common to all the species of quina is perceived, but somewhat aromatic, proper to this kind.
8. The *saliva* is dyed clear fallow and somewhat frothy.
9. No astringent quality is perceived on the tongue, palate, or lips.
10. When broken, and the fracture examined through the lens, the fibres present themselves in a parallel longitudinal form, like needles.
11. Its colour, pale yellow.
12. In its interstices an agglomerated powder is deposited, dry and of a fallow colour.

Character, supersalient; colour, fallow; bitter, aromatic; froth, thin.

The *quina roja* (red quina) is distinguished by the following characters:

1. The exterior bark very dry, and when undamaged, its interior surface is of a reddish colour.
2. Dipped in water and compared with the dry, its colour becomes deeper.
3. The powder preserves more uniformly the colour of the dry bark.
4. The cold infusion (with the same circumstances as referred to in the antecedent species) gives a stronger tincture than the orange, nearly without froth, of a red colour resembling that of the wet bark, of an active bitter proper to its species, and with a sediment of all the reddish powder of a deeper tinge than the dry.
5. When boiled it gives a stronger tincture without froth, deeper, and the colour of blood; of a more active bitter, and sediment like the foregoing.
6. The tincture in spirit of wine, strong without froth, deep in colour as the decoction, of an active bitter, and sediment like the foregoing.
7. When chewed, the common bitter of quina is perceived in a milder form, but active of its species and austere.
8. The saliva is tinctured of a reddish colour, with little froth.
9. It causes notably strong astringency on the tongue and palate, still more acute on the lips when licked by the tongue.
10. When broken, and the fracture examined through a lens, the fibres present themselves in a parallel longitudinal form like needles, and much more compact than in the orange.
11. The colour, pale red.
12. The agglomerated powder, deep red.

Character, supersalient; colour, reddish; bitter, austere; froth, thick.

The *quina amarilla* (yellow bark) is known by the following characters:

1. The rind very dry presents its interior surface of a yellow straw colour.
2. Dipped in water and compared with the dry, the colour becomes higher and somewhat resembling low fallow.
3. Its powder decides better than its bark; it preserves uniformity throughout, of a paler yellow than the bark.
4. The cold infusion gives a thin tincture, nearly without froth, of a paler straw yellow than that of the dry bark, of an active bitter proper to its species, and with a sediment of all the powder higher coloured, like the wet bark.
5. After boiling, it gives a stronger tincture without froth, higher coloured, and now nearly approaching in colour to the cold tincture of the orange (*naranjada*), and sediment like the foregoing.
6. The tincture, in spirits of wine, is thin and without froth, as high coloured as the decoction; of an active bitter, and sediment like the first.
7. When chewed, the common bitter of quina is perceptible, but active and pure, proper to this species.
8. The saliva of a yellow straw colour, and with little froth.
9. It does not leave any notable astrigency on the palate.
10. When broken and the fracture examined with a lens, the fibres are presented in a parallel longitudinal form at nearly the same intervals as in the orange (naranjada).
11. Its colour of a paler straw.
12. The agglomerated powder, yellow straw colour.

Character, supersalient; colour, straw; bitter, pure; froth, betwixt thick and thin.

The white bark (*quina blanca*) is known by the following characters:

1. The bark very dry and without accidental alteration, its interior surface is of a dull whitish colour.
2. Dipped in water it becomes a duller white, nearly gray.
3. The powder preserves more uniformly the colour betwixt white and grey.
4. The cold infusion gives a stronger tincture than any of the anterior species, and is covered with much froth, the whole superficies the colour of turbid urine, of an active bitter, proper to its species, and with a sediment of all the powder of the same colour as the wet bark.
5. After boiling it gives a stronger tincture with the same tenacious froth, bitter, more active, and like sediment.
6. The tincture in spirits of wine is thinner than the cold infusion, with less froth than the foregoing—colour of qualified claret, and sediment like the others.
7. When chewed, the common bitter of bark is perceived, but harsher and more disagreeable than any of the other species, proper to this kind.
8. The saliva is stained with a greyish colour, somewhat thick and strong, and very frothy.
9. It does not leave a sense of astringency nor asperity, but, on the contrary, a manifest flexibility and lubricity on the whole palate, tongue, and lips.
10. When broken, and the fracture examined through a lens, the fibres present themselves less woody, thin, and more fragile, in longitudinal parallels, and something less compact than in the red.
11. Colour whitish, inclining to grey.
12. The juice very thick, dense, and more abundant, than in the other species; of a dull white.

Particular virtues of each species of quina, and infirmities to which they may be applied.

The various species distinguished, we refer to observation and experience to discover in them the peculiar virtues of each by their more prominent qualities, and grounding his (Mutis) decision on both these heads, he ascertained that the most precious *quina naranjada* (orange coloured bark) was the primitive species, which surpassess all the other kinds of bark by its particular character of being *eminently balsamic.* Its manner of operating, as if by enchantment, and without failure in intermittent calentures, proved by the experience of a century and a half whenever it has been properly administered, convinces us of its absolute and exclusive efficacy in such infirmities. Hence it results, that this species is directly febrifuge, and it would be in vain that we should seek for an equivalent auxiliary amongst the other species, when the necessity for cutting infallibly the accessions is urgent. Richard Morton was the first who formed the happy conjecture that this species of bark produced the effect by operating on the nervous system. In effect, it is only in this way we may conciliate the various observations and arguments, when we see the wonderful rapidity of a remedy which arrests, at a stroke, the complete overthrow of our machinery in a succeeding paroxysm, without having excited any sensible evacuation. The like mode of operation is peculiar to those remedies whose virtue acts directly on the nerves; we should, therefore, be persuaded that this species of quina belongs to the class of *nervine.*

It appears unnecessary to investigate here the order of nervous remedies to which this species may belong; but it is very much to the point to advert, that the efficacy of this remedy is so active and rapid, that in the primeval times two drachms were sufficient to effect the wonderful cures which posteriorly could not be obtained with two ounces, and commonly from five to six are necessary, in consequence of the admixture of the other species, which being confounded with the proper kind have caused grievous injury.

Taking for granted the empire of this quina over the nerves, its application is extended to other periodical infirmities with intermission, in which the nervous system is known to be attacked. *Morton* even employed it in remittent calentures

although accompanied with inflammation, provided he previously ascertained the reality of any period, and he confesses that in such cases he never had cause to repent.

If these analogies well founded, and according to the proofs of experience, sometimes fail in practice, it is because the indicated species of quina has not been applied, and this was the cause of the fatal consequences which were experienced, when erroneously the *quina roja*, (red) was substituted for the *naranjada* (orange coloured.)

Quina Roja (*Red Bark.*)

By certain original information not to be doubted, we ascertained that the *quina roja* succeeded the *naranjada* (primitive) and being indirectly febrifuge, it could not produce the wonderful effects of its predecessor. Hence resulted the necessity of augmenting the doses, in order to cut the accessions, which was not always attended with success, but, on the contrary, frequently caused fatal results, bringing discredit on the specific, and introducing the uncertainty and confusion which yet endures.

This succedaneum species is distinguished amongst the others by the peculiar character of being eminently astringent; its successful action on gangrenes indicates its potency on the muscular system, and, consequently, its efficacy extends to all infirmities where it is expedient to re-animate (stimulate?) the action of the muscles, and produce in the mass of humours the heat which results from the greater elasticity of the solids.

Such is the virtue required in antiseptic remedies, but which predominates in this by the re-union of its eminent astringency, with the principles or qualities, common to all *quinas*. Hence it results, that this species is directly and preferently antiseptic, and that it would be useless to seek other auxiliaries of equal efficacy when the necessity is urgent to resist the progress of animal putrefaction in the flesh. This singular discovery humanity owes to the celebrated surgeon *Rushworth*, who, in our time, has saved thousands of lives, applying it in cases of gangrene, and even in those of remittent calentures. He also applied it in all the malignant fevers accompanied with pestilential buboes, and through this discovery preserved the lives of a frigate's company seized with pest.

In imitation of these casual trials, it was natural to undertake another by analogy. It had been observed that the suppuration in gangrenes preserved favourable signs during the use of the quina, which favourable appearance degenerated the moment the application of the quina was interrupted, resuming its favourable state as soon as the quina was re-applied. Hence arose the healthy suppurations in the ulcers, and hence by an immediate consequence its application was tried on small-pox. The glory of this discovery was reserved for the celebrated professor Alexander Monro, who, above all others, has promoted the use of quina in epidemics of this class.

These happy results were accompanied by others very unfortunate, from having confounded the quina roja with the primitive, attributing the different effects to imaginary causes. Those who unfortunately were attacked with inflammatory calentures and the miserable hypochondriacs, were always the victims of the erroneous conception with which the quina roja was administered to them. The most celebrated professors confounded by the unhappy effects, split into parties, and the discredit fell upon quina in general, because they believed that it was but one only species which had at all times been employed.

Such was the adventurous and unfortunate epoch in divers points of view, in which the quina roja predominated, a species above all others of such strange activity that we might call it respectively, incendiary, from which originated the opinion that people have entertained calling indiscriminately all species of quina *a bowel burnin gremedy*. Such was the activity required in the remedy destined for great and desperate cases, but so proper in its sphere, that, if erroneously administered, equally calamitous effects might be produced.

Quina Amarilla (*Yellow Bark.*)

To the *quina roja* succeeded the *amarilla* or yellow, and its mildness and effects overthrew the opinions which had been previously formed, but without discovering the cause, and thus the new opinions continued to bungle like the former. This substituted species is pre-eminent amongst the others by the particular character of its bitter, which savours of that of aloes. Its mode of operation with putrid calentures is immediately upon the humours, with the proper virtue to resist the spontaneous putrefaction into which they degenerate in those cases, together with that of reducing first in a manner, and exciting afterwards a moderate elasticity in the solids, as it were, opening and shutting the minute vessels, it indicates to us its power upon the mass of the humours, and consequently its efficacy extends to all the remittent and continuous calentures, as well as to many chronic diseases, when it becomes expedient to resist the spontaneous putrefaction of the humours. The use of the *quina amarilla* was substituted for that of the red since the year 40 of the last century, and the professors believed that it was the primitive. The large doses which it is necessary to give to cut the accessions, proves that it is indirectly febrifuge, but without producing the bad effects which with equal quantities were observed in the red. The *amarilla* is also found to contain the pre-eminent virtue of exciting to some extent, evacuations, which is the immediate effect of the momentary relaxation indicated in the whole intestinal canal. From this purgative virtue peculiar to the *amarilla* species, the vulgar error has originated of believing that all quina is purgative, when recently gathered and used.

We infer from what has been said that the febrifuge virtue of this species is indirect, and much weaker than the *naranjada*. It has been fortunate that in the want of the *naranjada*, the *amarilla* was chosen as a substitute, as this kind, by a longer but surer road in some complexions and epidemics, combats the attacks without leaving the fatal results of the red. The *naranjada* operates directly on the nerves, obliterating the predisposing cause, and without any reference to occasional causes, cutting infallibly and with admirable rapidity the accessions; but it not being always expedient to adopt this resource, we have another more salutary in the *amarilla* which acts directly on the humours, destroying the occasional causes without any relation to the predisposing cause. In the same manner we deny that the efficacy of the *amarilla* (yellow) can compete with the pre-eminent virtues of the red in malignant gangrenous calentures, suppurations and small pox. We concede that it may be somewhat useful for those qualities common to all the species, but its efficacy is not to be compared with that of the *roja*, (red) which operates directly, and as an antidote of its class in such infirmities, preventing universal depression.

Quina Blanca (*White Bark.*)

We cannot allege practical proofs, neither for nor against the *quina blanca*, so as to deduce positively the good or the evil which its administration in Europe may have occasioned, because this species of quina, which no doubt has been confounded with the others, has never been mentioned in any case, whether of medicine or commerce; nevertheless, this species is not inferior to any of the three before-mentioned, and it therefore deserves to be classed in the number of the *officinales*, to which name it is entitled by a character common to the virtual and active species.

Recognised as a legitimate species of the *genus*, and possessed also of a strong bitter, various experiments have proven that, continued for some time, it caused obstinate periodical calentures to cease, without producing any evil result, in consequence of which it was tried in cases of simple intermittent calenture. Very far from causing the incendiary heat of the *red*, or of moving the bowels like the *amarilla*, (yellow) it has always shewn itself benign. Subsequently, it has been administered in various ways, and large quantities, until we felt sure of its salutary operations. Hence it results that, being as indirectly febrifuge as the red and yellow, it should not be administered with the intention of cutting the accessions in regular cases when the necessity is urgent for correcting them, and when the *naranjada* (orange) should be used.

The white bark is supersalient amongst the others for its particular character of being highly saponaceous. Its mode of operating in obstinate intermittents and chronic diseases, thinning the grosser humours, and causing a moderate elasticity in the vessels, indicates its power on the bowels, and the great and small organs of the body called glands.

We have, therefore, in this species a remedy with the virtues common to the quina, but more proper, and of singular efficacy in many deep-rooted diseases of the large and small bowels, whether original or acquired. In such cases there are always congestions of humours proceeding from the retarded movement in the liquids, from the relaxation of those minute vessels, caused manifestly by the various species of spontaneous fermentation. Commonly, in such cases, a general indication is perceived at first, when this species of quina may be used preferently, for its direct detergent virtue, thinning and carrying off the impurities retained in the bowels.

The posterior successful trials made of the bark, in many and diverse obstinate chronic diseases, and principally scrofula, lead us to project other investigations to which this so recommendable species of quina invites us.

The reflections of Dr. Fothergill cannot be more judicious in proving the most preferent efficacy of the quina above the saline remedies so praised, and so much in use in cases of scrofula, and other diseases of the glandular system. The immediate benefits produced by the quina are justly attributed by this able professor to the regulation of the functions of the stomach, which are always *disordered* in such cases, and supplying to the common mass of humours a fresh vitious impulse, in which concur its density with the relaxation of all the solids. The digestion re-established by the continued use of so efficacious a remedy, leads to the production of a chyle of better quality, from which purer blood results, better order in the excremental secretions, and to improved nutrition of the whole body; and, as an immediate consequence to the proper activity and vigour in all the functions necessary to expel the corrupt reliques so deeply rooted.

This is exactly that general indication which we have said appears in nearly all chronic diseases, in which the quina, directly or indirectly, produces better effects than any that might be hoped for from any other remedy which operates by a less direct channel. In our opinion, there is much more to be expected from the efficacy of the quina, and the general benefit derived from the re-establishment of the digestion. The quina blanca (white) is, in this respect, preferable to all other species.

The cases are very rare, indeed, of obstinate periodical attacks, which have not produced those fatal results which caused the death of hundreds in former ages, anterior to the happy discovery of the quina. Posteriorly they have also been observed, but then they have been the consequence of an improper regimen, badly ordered remedies, or the unavoidable result in previously ill-disposed bodies.

Having, therefore, to combat at all times diseases of that nature, whether the accessions have ceased or not, it would be very proper, the necessary precautions and preparations previously taken, to direct the cures with this species of quina, the most effectual to destroy the deep roots which this malignant disorder takes in the bowels. No other species admits better the accompaniment of the different efficacious drugs, which are so necessary in chronic infirmities, their operation being aided by means of this bark. Its eminent saponaceous virtue and mild astringency, with all the common qualities, in proportion, of the whole species, decides it as preferent in cases of inflammatory calenture. When it is deemed expedient to use this species, great care should be taken to exclude absolutely the *naranjada* (orange) but more especially the *roja* (red); but, in a case of necessity, the *amarilla* (yellow) may be substituted.

No species is more proper than the white to resist, on the one hand, with convenient suavity,

the putrefaction or alcalization which accompanies all calentures, and to dissolve, on the other, the phlogistic concretion. As, also, thousands of cases occur of very slow convalescence, for the want of natural vigour to discharge the reliques of previous infirmities, no other species can better than this enable the functions of the human body to re-establish its primitive state. Innumerable temporary disorders, innumerable slight indispositions, neither of declared infirmity nor disease, nor complete health, should be included in the number of cases belonging to the prophylactic, wherein this *most benign* species of quina should be used.

Cerveza de Quina.

New method of preparing the quina, and making beer of it.

The most natural, simple, and salutary preparation, is the fermented quina; the liquor resulting from this operation is that balsam of life so sought after in past ages. The quina being ground into fine powder, is put into the vessel intended to hold the water and saccharine, of which the beer is composed. To every pound of quina should be added one hundred pounds of water, and eight of sugar, (brown) or honey. In a very short time the fermentation commences, and the taste, as well as the smell, indicates when it assumes the vinous state; in which case the liquor should be transferred to another vessel, or else bottled, taking the precaution to decant it, so that it comes off clear, and without mixture of the dissolved juice, which floats near the sediment, or woody part of the bark. When the beer is destined for medical purposes, it is necessary before drawing it off, to shake the vessel gently, in order that the beer should also become somewhat turbid and charged with the said quinine juice.

Vinegar.

In the formation of the vinegar of quina, there is no other operation to be practised than to allow the vinous fermentation to pass spontaneously to the state of vinegar. This last transit is much more tardy, and the strong vinegar is not obtained in perfection until the lapse of three or four months, leaving the whole work to the course of nature, without precipitating its operations. The manner of drawing off the vinegar from the vessels is the same as before-mentioned, the clear, by decantation, for the *dietetic* regimen, and the turbid by gently agitating the whole fermented mass, in order to obtain the virtual juice which floats on the, properly called, sediments: this will serve for all medicinal purposes. The most useful sirop of the vinegar of quina is to be made according to the mode, customary in dispensatories.

Those vinegars which form a branch of the new practice of quina are, as though we should say, those of the first kind, and ought not to be confounded with that which results from the ulterior fermentation of all the sediments mixed for the use of clysters.

Tisans.

The preparation of quina to be employed in *tisans* is made by a similar procedure to the above. As in this preparation it is not intended to extract immediately the whole of the juice without introducing fermentation, which is not to be obtained in a few hours when it is to be used in decoctions or tinctures, the liquid necessary for its promotion will be sufficient. To this end the quina should be put into a vitrified vessel, covered as a tureen, observing the same proportion of quina and saccharine, but, as to water, no more than what is necessary to keep the mass *loose*, and covered with little liquid. This fermented mass is diluted in water, wine, or anything else judged proper to make the tisan or tincture at a slow fire for three to six hours. If greater perfection be desired through the medium of hot ashes or sand, the quantity of water and fermented mass should be regulated by the object the physician has in view in its administration, it resting with himself, whether it is to be in a concentrated or more diluted form.

Clysters.

The last use of the sediments is that of clysters, so important in the acute infirmities, and especially whilst the custom is persevered in of administering the crude or fermented quina in all substance. We foresee that some people may be still inclined to the use of the remedy in all its substance, conforming only with our reflections upon the election of the four species, excluding those relative to our preparations; and, also, that others will put in practice the simple opiates of the fermented mass, in which case we should have no more sufficient reasons to oppose to the latter, than the repugnance of the sick, and to the former reproduce the inconveniences and injuries which we have promised to make manifest in the proper place.

The sediments being, therefore, preserved for their ultimate destination, they should be transferred with saccharine, and a little water, to other separate vessels, where they complete the fermentation, ejecting finally all the virtual juice of the remedy adhering to the woody fibres of the bark. A common tea cup may serve as a measure for the regular quantity of the mass, which should be diluted in as much boiling water as may be necessary for the clyster, allowing it to remain in the vessel a few minutes, until it acquires the temperature fit for administration to the patient, previously straining it, and expressing the juice of the mass through a thick linen or cotton cloth. No juice of importance remaining now in the sediments, they may be thrown away as useless.

It only remains to be mentioned here, that the preparation of the beer, and vinegar of quina, is always the same, selecting any one of the four officinal species, uaranjada, (orange) roja, (red) amarilla, (yellow) or blanca (white); a supply of which should be kept at hand, (*paratum vel repositum in futurum*), because, as not only the diversity of the species, but also the new preparations, include singular ideas of another, new practice in medicine, it would be highly dangerous not to keep to the spirit of our reflections even in the first trials. We flatter ourselves in the well grounded hope that in future skilful professors will adopt our ideas, improve upon and amplify them, for the benefit of humanity.

The beer of ordinary drink is an appropriate mixture of three species with reference to their eminent virtues, and the general indications so frequent in practice; so that persons in good health may use it through choice as a preservative, and the infirm as a healing beverage, and by no means disagreeable. Eight ounces of yellow bark (quina amarilla) four of the red, (roja) and four of white (blanca) with a nutmeg, and half an ounce of cinnamon, form the composition of the packet, which is to be put to ferment, in one hundred pounds of water, with the sugar before-mentioned. This is the beer of ordinary use, which we call *prophylactic*, or preservatory. to distinguish it from another kind, entitled polycresta, of which we shall speak hereafter.

Elixir.

Without varying the proportion of this mixture, the precious elixir of quina is obtained. In its formation the packet is put to ferment in the glazed vessel, with the sugar and water, as prescribed for the fermentation of the mass destined to the use of tisans. Arrived at the point of vinous fermentation, the loose mass is placed in a flannel bag, filtering afterwards, by tissue paper, the liquor, which is returned to the bottles, and carefully corked up. As a very small quantity of liquor results from this operation, in which we only obtain a precious spirit, or, as though we should say, a small portion of the quintessence of quina, the surplus mass remains yet loaded with the virtual juice, and is, therefore, serviceable for the formation of beer. Indeed, we see no impediment in first extracting the elixir in all operations of this prophylactic beer.

It frequently occurs in practice that in many cases it is expedient to render the quina more purgative than the yellow (amarilla) is of itself, and accidentally, the white. If we may very often do this with these two species, we should rarely attempt it with the red (roja) and *never* with the orange (naranjada.) Our experience, governed by a certain analogy in the first trials, has led us to prefer rhubarb in the mixture of the yellow bark, as the root of jalap in that of the white. To this end a supply of the two purgative quinas should be had, keeping each fermented mass separate in their respective vessels, in which the immediate mixture of two ounces of rhubarb, and two more of root of jalap is to be effected, both reduced to powder, proportioned to one pound of quina, yellow or white, in order that the whole may ferment together simultaneously with the sugar and water before mentioned in the preparation of the masses destined to tisans.

Sirups.

It will also be expedient to keep prepared the two sirups of the purgative quinas, yellow and white, which may be administered in the appropriate vehicles, or combined jointly with the tisans of their respective species. In the formation of the sirup we should proceed adverting to augment the quantity of the water necessary in the previously formed (fermented) masses, one or two days before expressing the whole mass by a bag, made so as to collect in this concentrated tincture the greater part of the virtual juices of the quina. By this operation a very strong liquid is obtained, to be reduced to the form of sirup with the corresponding portion of sugar.

A thousand cases will occur in practice, especially in the treatment of the infirmities of children and delicate persons, in which we are bound to accommodate ourselves to indispensable considerations, when we can manage to administer easily the most repulsive medicines under a disguised form, the remedy masked without any detriment of its virtue, and with the additional advantages which result from its fermentation.

(Cerveza Policresta.)

Polycrest Beer.

The preparation of the above-mentioned beer, which, in professional terms, we call polycresta, is another combination of a determinate species of quina with another powerful American remedy—the sarsaparilla. The pre-eminent efficacy of the sarsaparilla to subdue the species of endemic *lues venerea* of these regions, as well as many other disorders complicated with this infection, is indubitable; but, in Europe, the use and application of this remedy has been somewhat like that of the quina, as to success, and the contrary.

We have posteriorly reformed the ancient practice, reflecting that to the new preparation of the quina we might administer the fermented sarsa, and the results were highly favourable. From this originated also the polycresta beer, which we have employed with good effects.

The composition of the packet consists in the mixture of the sarsa and the *quina roja* (red bark) with the absolute exclusion of the other three species, putting for four ounces of the said quina, double the quantity of sarsa reduced to powder. All the forms stated for the beer, tisans, and sirup, have place in this composition, in order that they may be varied or combined, according to circumstances and necessity; adverting only, that a greater portion of water is necessary in the preparation of this beer.

We shall conclude, reflecting that all the preparations invented up to the present, have been unable to release the quina from its state of crudity, and that from this cause, and from the confusion with which its species have been administered, have resulted all the evils which experience has made manifest. In the new preparation, all those evils are averted, the separate advantages united in it being easily summed up.

The quina put in infusion, and the powder immersed in the water, it commences at once to discharge all its salts, and by reason of its maceration the woody part becomes softened, by which means its gum is also detached, spreading itself freely in the water before fermentation commences. So soon as this begins, and whilst gathering its force, that vinous spirit is engendered capable of dissolving resin, with the advantage of destroying during its process, the three properties of the virtual juice, causing it to pass gradually and without violence from the state of crudity to that of decoction (*Maturitas, perfectus status rerum,*) and proper maturity, so that by an operation so natural and simple, we are enabled to extract the whole active substance of the bark, without recurring to the diversity of liquids which have been hitherto

employed, or the precipitate and violent operations of fire. But of all the methods employed up to the present, the most disagreeable and prejudicial to patients has been the administration of the quina in powder.

Prospectus of the names and properties of the quinas.

In Botany. Cinchona.

Lancifolia: Oblongifolia: Cordifolia: Ovalifolia:

Quina Bark.

Lanceleaf: Oblongleaf: Heartleaf: Oval-leaf.

In Commerce.

Naranjada: Roja: Amarilla: Blanca: Primitive: Succedaneum: Substitute: Alien.

In Medicine.

Bitter.

Aromatic, austere, pure, sharp. Balsamic, astringent, aloetic, saponaceous, antipyrectic, antiseptic, cathartic, rhyetic. Antidote, policresta, ecphractic, prophylactic, nervine, muscular, humoral, visceral.

Febrifuge.—Indirectly febrifuge.

THE MEDICAL TIMES.

Saturday, July 15, 1843.

Cui non conveniet sua res, ut calceus olim
Si pede major erit, subvertet: si minor, uret.

Medicine is as fond of peace, if not of solitude, as that other of Apollo's children, poetry. A jealous mistress, admitting with reluctance divided attentions, — the suitors who in past times have wooed her with most success, have come down to us remarkable, generally, for (what, indeed, well repaid their devotedness) her ample favours. In our days, though the church and the bar, though manufactures and agriculture, have furnished forth respectively no mean candidates for public attention, the medical profession, true—perhaps, too true—to its mission (if the solitary case of the *unsurgical* and *unmedical* Wakley be unmentioned) has pursued its useful course of study or action, a sufferer, it may be, but not participator of our public policy,—its members as little prominently interesting themselves as the most *insouciants* of those rare patients of theirs, the gypsies.

Besides the exacting and peculiar nature of medical men's studies, we have in the way of further accounting for their political insignificance, the interesting fact that their *pabulum vitæ*, practice, and, still more, the *dulcia vitæ* (to be won only by extensive practice), are opposed essentially to any publicity, save for professional cleverness. Your most foolish people have an instinctive notion that a Jack of all trades, however well in anything else—statesmanship or churchmanship not excepted—is not to be depended upon in medicine. A Philpotts may pamphleteer himself into a bishoprick, a Copley declaim himself into the woolsack, but an Astley Cooper or a Copland must stand or fall by his professional labours, or professional semblance of labours. Our medical brethren, whether idle or active, pay to professional avocations the same sort of homage which hypocrites are represented as paying to virtue. They are always *busy* in doing nothing, if they have nothing better to do; and act even before the Property-Tax Commissioners, as if they held as an article of faith that the semblance of large practice was something more than a short cut to its reality. Attendance at a political meeting would be extinction to this deluding and often delusive conviction—and thus, between the public's mode of judgment, and the profession's corresponding mode of action, medical men are denied any prominency that is not essentially medical in its character. In a country like ours, in which nothing is done in the way of legislation, except through the influence of the purse or through that of an excited public, it is evident that a profession in the position in which we have described ours to be, must, if well arranged and without cause for change, possess for itself government and self-correction, or have had systems formed for such by our long dead and ignorant predecessors, harmonizing marvellously with times, habits, wants, and feelings, essentially different. That our government exhibits either of these characters, it would be monstrous to assert. We labour under the most urgent necessity for change, and are in a position in which we can neither apply a remedy ourselves, nor secure its application by those who can.

If any argument, among the thousand we advance, is stronger than another to prove the numerous grievances begotten by the system we have laboured under, it is offered in the immense efforts which medical men, despite the ties which bind them to privacy or their profession, have made for their removal. They have formed hundreds of associations—attended thousands of meetings—have, through the provincial and other associations, subscribed jointly thousands of pounds,—and though we believe they have as yet, by these means, advanced not one step towards *real* reform, nearer than the day when they first commenced giving their valuable time and still more valuable money, still they have at least erected a monument to the need of reform and to their own honour, if not to their own prudence, which will last as long as medicine itself. Mr. Guthrie, and those with him, may tell us *at the very moment they are consistently promoting a change*, that they have removed every real grievance; but if the laws of our moral nature teach us anything to be depended upon, we may point to the earthquake-heavings of our profession, and say, "There is in them that which gives you the lie!"

The past labours of our brethren in this cause convey another lesson, which at this moment ought not to be lost sight of. They should teach Sir J. Graham that the alterations suggested by the heads of the corporations, as convenient to them, cannot be satisfactory to the profession. We have not laboured for the corporators' convenience. The sacrifices we have made have had a far higher object—an object of magnitude more proportionate to the causes that won them. We seek reforms which would be useless, if shaped down to make the wants of thirty thousand practitioners, and the requisitions of public health, compatible with the gratification of the exorbitant vanity, or the fulfilment of the domestic arrangements of some twenty or thirty lucky or patronised individuals. Justice must be looked at, not in her effects on the few, but on the many,—and it must be recollected for us, that if right in enforcement may injure a few, wrong in its perpetuation must maltreat millions. It is very comfortable, no doubt, for a carpet-politician to deal with national laws in so easy and silken a way, that, while pretending to remedy monstrous grievances, he may make a specious change, which, of little or no harm to any body, is of as little good. In the present quietude of the medical body, Sir James Graham, backed as he is by the corporators, may imagine that such glittering jugglery as this, may succeed for the moment, and that he will gain the deceptive credit of having settled—not his own character for honesty—but the question. He will probably find himself mistaken; but, if not, we are quite certain that the work will only have to be done again. We have not worked so hardly for so petty a result. The causes that dragged us from retirement into the turmoil of medico-political life, against our inclinations, and opposed to our interests, will continue in their primal force, and produce similar effects. Better, then, do the work well once, or leave it wholly undone.

INTERESTING CASES OCCURRING IN THE PARISIAN HOSPITALS.

Reported for the "Medical Times."

On a Case of Hare-Lip (*Labia Leporina*), *complicated with a projection of the* os maxillare superius, *and a division of the palate and* velum palati.

Before describing the case which forms the subject of the following article, it may not be uninteresting to pass in rapid review, the different methods proposed to remedy this deformity, and to point out the several accidents or inconveniences to which they give rise.

1. Franco advised cutting off the projecting portion of the bone, before uniting the fissure; but, as Boyer observes, (*Mal. Chir.* Vol. VI. p. 265) "this operation is constantly followed by a diminution in the size of the upper jaw, which ceases consequently to correspond with the inferior;" besides which, it gives a disagreeable expression to the features, from the projection of the nose, and the retreat of the upper lip.

2. Desault proposed compression, persevered in more or less, according to the gravity of the disorder. Certainly this method does not offer the inconveniences of the former, and ought on that account to be preferred; but when the projecting portion of the bone is slight, it is more than probable that the pressure of the upper lip, when united, will suffice. Such a conclusion may be admitted, and in support thereof, Dunn, of Scarborough, thus expresses himself:—"I had two very unseemly cases, with an immense division of the palate, together with a projection of the alveolar process, which, with the incisor teeth, resembled the

talons of a bird. In the first case, the teeth were carefully drawn, and the operation performed, first on one side and then on the other, with perfect success. In the second case, the patient was cured without extracting the teeth." Mr. Cooper, in recording the foregoing opinion, judiciously adds (*Dict. Pract. Surg. Hare-Lip*): — "These facts should lessen the haste with which certain operators proceed to cut off every projection of the alveolar process, for a moderate prominence of bone, without any sharp, irritating edges or angles, will not hinder the success of the operation; and even the propriety of removing teeth must entirely depend upon their being likely, by their direction, to irritate the lip and disturb the union of the fissure." On the other hand, if the projection be considerable, few patients have sufficient perseverance to continue the compression for the necessary length of time, or courage enough to support the pain it produces: but, in admitting such to be the case, still it cannot push the bone so far back as not to leave a deformity, the reverse of that mentioned when speaking of the preceding method, besides which it often shakes the teeth, and causes them to fall out.

3. M. Gensoul, desirous of uniting the two, proposed pushing the intermaxillary bones back with sufficient force to fracture the parts which support them, and prevent their receding. This operation has justly been abandoned by practitioners, notwithstanding the high encomiums M. G. brings forward in its favour, it being utterly impossible to say how far the fracture may extend, and what accidents it may occasion, should it reach the base of the skull, a circumstance not at all improbable.

4. Struck with the dangers and inconveniences of the methods hitherto recommended, Professor Blandin, convinced that the *septum narium* supported the projection, and prevented its receding, proposes remedying the deformity by the following operation: —

The patient, placed in a convenient position, his head slightly elevated, and held motionless by an assistant; the operator, on the right side of the sufferer, seizes the tubercle and cuts off a triangular portion of the *septum narium* with a strong pair of scissors. The anterior division should be vertical, the posterior oblique, upwards and forwards, and the base of the triangle corresponding to the roof of the mouth. The part thus taken away, should extend upwards sufficiently to allow the projecting bone to be easily pushed back. Having proceeded thus far, the rest of the operation ought to be postponed for a day or two, as consecutive hæmorrhage sometimes takes place, and in such a case, it can be stopped as easily as if it had occurred during the operation; whereas if the lip had been united, it may be absolutely necessary to destroy the cicatrix which had began to be formed, in order to check the flow of blood.

These precautions having been observed, the operation will be terminated as for simple hare-lip. In order to prevent the incisor teeth taking a false direction, they ought to be fixed by a silver wire, or, which is still better, by a silver plate modeled on the palate, to the molar teeth, for in these cases the operation must never be performed before the child is at least two or three years old.

From the preceding remarks we may conclude.

1st. That when the projection is slight, the pressure of the upper lip, when united, is sufficient.

2nd. That when it is considerable, the method proposed by Professor Blandin ought to be preferred.

Case.—A fine, healthy lad, seven years old, was brought to the Hôtel Dieu, Paris, to be operated upon for a complicated hare lip, and was confided to the care of M. Blandin, Professor of Operative Surgery, at the School of Medicine, and one of the surgeons of that hospital. The division was double anteriorly, simple posteriorly, and affected not only the upper lip, but also the bones of the palate, and the velum palati, extending upwards into the nostrils. The fissures separated completely the part of the bone which supported the incisor teeth from the rest of the os *maxillare superius*; the *septum narium* united anteriorly with the inter maxillary bone, was further back free of all adherence, and was pushed forwards and downwards by the development of the base of the skull; the nose was flattened and considerably enlarged by the advancement of the inter-maxillary bone, and the tubercle which adhered to it. The deformity was a source of great inconvenience to the patient, rendering intelligible sounds, utterly indistinct, and causing mastication and deglutition to be performed with great difficulty.

The age and general state of the health of the patient leaving little doubt as to the success of the operation, it was decided upon, and performed in the manner above described. The only accident which occurred, was the division of the branch that the *arteria maxillare interna* furnishes to the *septum narium*, and which bled profusely, but was stopped by twisting the artery. The portion of the *septum narium* removed, the inter-maxillary bone was easily replaced in its natural position, carrying back with it the tubercle. The child was then removed and the rest of the operation postponed for fear of a renewal of the hæmorrhage; nothing however occurring, two days after the edges of the hare-lip, on both sides, were cut off, and the operation completed as usual.

Four days after, the pins were removed, but the cicatrix, until the tenth day, was supported by adhesive plaster. Fifteen days having elapsed, on examination the cicatrix was found perfect, the upper lip and the nose (this last was drawn downwards at first) in their natural position, but the inter-maxillary bone, wanting the support it received from the part of the *septum narium* removed, had a tendency to turn inwards. To remedy this accident, a silver plate adapted to the palate, and attached by springs to the molar teeth, keeps the incisor teeth in their proper direction, and will be worn until the inter-maxillary bone is united to the rest of the os maxillare superius.

Garland de Beaumont D. M. P.

Paris, 15th Dec., 1842.

BRITISH MEDICAL ASSOCIATION.

Exeter Hall, July 4, 1843.

DR. WEBSTER, PRESIDENT, IN THE CHAIR.

Dr. Lauder, of Sloane-street, Chelsea, was unanimously elected a member.

A discussion having taken place on the subject of Medical Reform, in consequence of the Council having learned that Sir James Graham was disposed to advise her Majesty the Queen to grant charters to both Colleges, which the Council believed would be highly injurious to the interests of the medical profession;

It was resolved,—

Firstly. That a member be requested to enquire, in the House of Commons, if it be the intention of Government to grant charters to the existing Colleges of Physicians and Surgeons, and that a communication be addressed by the President to the Secretary of State for the Home Department, on the same subject.

Secondly. That it is highly desirable that the profession at this critical period should forward to her Majesty the Queen, addresses, praying that she will be graciously pleased not to grant any charter to either of the Colleges, until the whole subject of Medical Reform shall have been duly considered in Parliament.

Thirdly. That the attention of the Medical Associations be specially called to the foregoing resolutions, and to the present peculiar state of medical affairs; and that copies of the resolutions be forwarded to the secretaries of the different Associations.

In consequence of some communications, relative to the late order of the Poor-Law Commissioners,

It was resolved,—That all those medical officers who may feel themselves aggrieved by the proceedings taken in connexion with the late General Medical Order of the Poor-Law Commissioners, be hereby invited to forward particulars of their cases to the Secretary of the British Medical Association, Exeter Hall, in order that active measures may be taken for the removal of the grievances.

The President announced, in the absence of the Secretary, that the petitions agreed to at the last half-yearly General Meeting of the Association, praying for Medical Reform, and that no charters should be granted at present to the two Colleges, had been duly presented —to her Majesty by Sir James Graham, to the Lords by the Right Hon. Lord Campbell, and to the Commons by H. G. Ward, Esq., M.P.

The meeting then adjourned.

CLINICAL LECTURE ON CASES OF DISEASES OF THE NERVOUS SYSTEM.

Delivered at King's College Hospital, (During the Summer Session, 1843) By R. B. TODD, M.D., F.R.S.

CASES OF HYSTERIA.

Case 1.—There is first the case of Marianne Rothwell, ætat. 17, at present in King's College ward. This girl affords a good example of the hysterical constitution. She has, to a marked degree, the full upper lip so frequently to be noticed in women of this excitable temperament. She was always healthy until three months after her menses shewed themselves. During those three months the menses continued regular, and her health remained good; but the fourth month the flow was scanty, and has continued so ever since at each subsequent monthly period, lasting only a single day, and being attended with considerable pain in the loins and in the back of the head, with loss of appetite and nausea. To these has been added, within the last six months, that frequent attendant on hysterical complaints, leucorrhœa, a certain indication of uterine or vaginal irritation. In this girl we find many of those remarkable nervous phenomena which are characteristic of hysteria.—She is frequently troubled with globus; she is easily excited, and when she cries has great difficulty in preventing the long continuance of the fit. She has frequently the sensation of insects creeping along her flesh, especially up the left side. She also complains of fixed pain in her left side. She is liable to fainting fits, and to numbness in the course of particular nerves.

This girl was brought into the hospital in the night of the 5th of June, in an unconscious state, shivering violently, her teeth chattering, unable to answer questions, but talking incohe-

rently; she could not be roused by shaking her or speaking loudly to her. Before she came in she had been frequently soused with water without avail; she was, however, speedily brought to her senses by flipping the soles of her feet with a towel and striking them with the palms of the hands, and by the administration of a little ammonia.

On coming to herself she stated that she had been attending a Wesleyan meeting that evening, where she met several friends, but says she was not excited much more than usual. On returning home in company with her mother she complained of severe pain in the left side, followed by faintness, which passed off; the pain in the side, however, increased to such an extent that she could hardly walk, and, while passing near the hospital, she was again seized with a sudden sensation of faintness, and lost her consciousness, being unable to remember anything until she found herself in bed at the hospital after an interval of four hours.

The next day she complained of soreness all over her, as if she had been beaten, and experienced a good deal of the sensation of globus; shivers occasionally, her teeth chattering, and her body trembling; and complains of coldness and numbness of the feet.

On the 7th of June we found that she had fainted several times since the previous evening and that she had also frequent fits of sobbing, alternating with lightness of spirits. Still feels the ball in her throat: her feet are still very cold and numb; slept well; bowels confined; the pain has shifted from her left to her right side. To have purgative medicines immediately.

June 8. No faintings; pain in the right side very troublesome, it extends along the back; she has also a pain in her right shoulder when she attempts to lift the arm.

June 9. To-day she had quite the appearance of a person labouring under hemiplegia of the right side, excepting that her face was not affected. There was considerable weakness of the right upper and lower extremities, and in walking she dragged the right leg almost as a hemiplegic patient would do. She has pain and numbness down the arm and leg

These symptoms passed off in two or three days, and on the 14th she was seized with another hysterical paroxysm. About nine o'clock in the evening she suddenly jumped out of bed and ran down stairs into the Adelaide ward, where she was soused with cold water, which brought her round, and she was then carried back to bed. During this time she was quite unconscious of what was passing. She tore her hair, threw her arms about, and sobbed violently. To-day, (15th) she has pain in the head and numbness of the right side of the chest. Bowels confined.

Under the use of a general tonic treatment, attention to the state of the bowels, and shower-baths, this young woman has greatly improved in health.

The paralytic state which showed itself on the 9th was very curious. It was an excellent example of the hysterical paralysis, arising probably from a temporary and transient disturbance of the nutrition of the sensitive and motor nerves of the extremities.

Case 2.—In another case we find an example of hysteria apparently passing into epilepsy. Rebecca Pilbear, ætat. 21, a servant of all work, and probably of hard work also, enjoyed good health until she was of the age of 15, when her catamenia appeared. About this time she states that she became subject to fits which, according to her description, must have been of an hysterical nature. They came on with globus, occasioning a sense of suffocation, and this was speedily followed by an irresistible desire to throw herself about (emotion controlling will.) After this violent exertion had lasted for about half an hour, she would fall into a deep sleep, which would continue for two or three hours; during these fits she never bit her tongue nor foamed at the mouth, but she was told that she used to clench her hands and grind her teeth. Six months ago these fits became altered in their character; she ceased to have any globus or other premonitory warning; she would fall down suddenly deprived of sense and motion, and remain in that state for half an hour. She has been found lying in that state in the kitchen without being at all aware how the fit came on. For some time before these fits come on, she is apt to be drowsy, and dreams a great deal.

The patient was sent into the hospital in consequence of these fits. She was quite well during her sojourn here, and as she showed no tendency to a recurrence of the fits while in the hospital, I did not think it right to keep her in longer, and she certainly did not, during that time, show any very marked indications of the hysterical state of constitution.

Case 3.—I shall briefly allude to a third case, which excited a good deal of interest in consequence of its resemblance to an apoplectic state, or one of cerebral oppression from some other cause. Anne Rollins, ætat. 18, a servant of all work, who had come from the country and been only a few months in London. This patient had been gradually getting into bad health for some weeks before this attack, and she was suffering from suppression and great irregularity of the catemenia. The change from a country to a London life had, no doubt, contributed largely to produce this. She was brought into the hospital in a state of almost complete insensibility. She appeared in a state of excessive drowsiness, but by loud talking and much shaking she could be roused so as to give a monosyllabic answer, after which she would sink into the same somnolent state again. There was no stertor. The pulse numbered 80, but was small and very feeble. There was coldness of feet, and an evident tendency to a state of syncope. Pupils small, and did not contract. No paralysis.

It appeared, on inquiry, that on the evening previous to her admission she had suddenly fallen down, crying out that something had given way in her head, and she immediately fell into the insensible state in which she was brought to the hospital.

In the night after her admission she became delirious, and talked wildly; vomited after breakfast next day. During the whole of that day remained in a listless state, never speaking unless when spoken to, and then replying only in monosyllables. Face pale; surface cool; pulse 80, small; no deviation of the tongue; urine copious; bowels confined.

There were many points in this case calculated to excite apprehension lest some organic mischief were going on in the brain. Inflammation of that organ often steals on insidiously with little or no more warning than that afforded by the symptoms in this case; yet I felt convinced, from the first moment I saw the girl, that the phenomena were of the hysterical kind, and I confess, that I was led to form this opinion more from the general aspect of the patient than from any particular symptoms. Her countenance was decidedly indicative of the hysterical temperament; she had the full upper lip well developed, and her symptoms although essentially the same as those often present when serious lesion was commencing, appeared of that exaggerated kind to which the mimic symptoms of hysteria almost always belong. Mimicry is generally an exaggerated representation of reality, and so the merely hysterical or nervous actions frequently exaggerate the symptoms which more serious disease puts on. And let me here advise you to accustom yourselves to observe the physiognomy of disease. No description, however accurate and graphic, can leave the same impression as that derived from actual observation frequently repeated. How often does the surgeon profit by a well-educated touch! You must endeavour to obtain a *visus eruditus* as well as a *tactus eruditus*.

The progress of this case fully justified the opinion I had formed. The patient had been treated with purgatives sufficient to produce moderate action of the bowels, and with small doses of ammonia frequently administered. On the third day, finding that there was great disposition to coldness of the extremities, I ordered three ounces of wine, and improved her diet. She recovered gradually from the drowsy listless state, and was able to walk, and to take more nourishment and stronger tonics, her chief complaint being the pain across the forehead. After a month's sojourn in the house she had improved sufficiently in strength to enable her to undertake a journey into Yorkshire, where her friends lived, and whither I advised her to return.

The last case to which I shall refer you illustrates some of the hysterical symptoms as they occur in the male subject.

Case 4.—John Bruce, ætat. 22, a single man, a porter, was sent in here as a case of paraplegia, which it was thought originated in an injury. He has been a teetotaller for some time, having been induced to become so in consequence of believing that his father shortened his life by hard drinking, and seeing the evil consequences of drunkenness in his brothers, who are addicted to that vice. He had been quite healthy until ten months ago, when he met with an accident by which he injured his back and loins, and struck the back of his head so violently as to stun him for a short time. States that he kept his bed for three months after the accident, during which time his appetite continued very bad, and he felt extremely weak and languid.

The weakness is by no means limited to his lower extremities, but affects his whole body. The difficulty of walking or standing is evidently more connected with general languor and depression of his nervous power than a local paralysis. He passes large quantities of pale urine; suffers greatly from dejection of spirits; is very subject to flatulence; has pains flying about his hips. On examining the spine it was found to be exquisitely tender, and when touched at any part, especially over the spinous processes, he cried out much more loudly and with more expression of suffering than a patient would do who was affected with caries of the vertebræ. His tenderness, however, was not confined to the spine. Whenever pressure was made on the ribs, the scapula, the arms, the same shrinking and exclamation of pain took place.

This patient looked pale and ill-nourished. The red particles were evidently deficient in his blood. He had much the appearance of a man who was addicted to the vice of masturbation, and I strongly suspected his symptoms were attributable to this cause.

The patient improved considerably under a course of shower-baths and tonics, quinine, with sulphate of iron, and good diet. His temperance principles induced him to refuse porter, and I did not deem it advisable to urge it upon him.—*Lancet.*

ERRORS IN DIAGNOSIS.

(To the Editor of the "Medical Times.")

Sir,—Having read some excellent observations of yours, on a case of Wound of the Heart, in a late number of your journal, I am induced to call your attention to a case of (so called) meningitis, which you will find at page 422, of the Medical Gazette, for June the 16th. As it has evidently been published for the good of the profession, I should wish to treat it with justice, tempered with mercy;—yet when a man ventures to publish precedents for others—precedents fraught with mischief, he cannot object to see his opinions criticised. If the dilated pupil, the wild stare, the intermittent pulse, &c. were not adequate to attract his attention to the true nature of the affection; surely the constant recurrence of the symptoms, albeit his heroic bleeding, ought to have convinced him ere this, that it was simply a case of that disease, which so ably mimics all diseases to which flesh is heir—viz, hysteria. I am aware that anything that I can say on the subject will be much better said by your talented pen, and I shall therefore commit it to your hands.

Treating shadows for realities is one of the most constant and most fatal errors of the present day, often have I heard an (*active*) practitioner exult in having saved the life of a (poor chlorotic) girl that was attacked with pleuritis, pericarditis, and bronchitis at the same moment, when in reality he had hastened her towards her final destination, by excessive depletion. The works of Hall, Brodie, and Dr. Griffin ought to be engraven in letters of gold, and placed in every medical library. With every good wish for your excellent journal.

Yours,
"ANALYSIS."

LUXATION OF THE PATELLA ON ITS AXIS.

By JOSEPH P. GAZZAM, M.D., of Pitsburgh, Pa.

Sept. 10th, 1842. This evening, at 7 o'clock, James. aged 21 years, son of Judge Porter, of Pittsburg, was thrown while wrestling, and immediately found himself unable to rise.

On seeing him about an hour after the accident, I found the patella of the right leg dislocated on its axis, i.e., it was lying on its edge—presenting the posterior face outward, and the anterior face inward—the inner edge resting in the groove between the condyles of the femur.

Flexing the thigh on the pelvis, and straightening the leg, I endeavoured to replace the bone by pressing its edges in opposite directions, but failing (after repeated trials) I requested that the patient should be brought to town, (the accident happened three miles out of the city) and additional advice procured.

At about 12 o'clock the patient was brought to his father's house, where I met Dr. Addison. After repeated unsuccessful attempts at reduction, it was thought well to lessen the tension of the joint by dividing the ligament of the patella. This I did by introducing beneath the skin a narrow-bladed knife, and cutting the ligament close to the tubercle of the tibia. Again we attempted reduction but failed. The patella could be moved on its edge more freely than before the cutting, but resisted all our efforts to replace it.

Dr. Speer was now joined to the consultation, and. in accordance with his suggestion, the patient was placed erect, a vein opened, and the blood allowed to flow until the approach of syncope, when the efforts at reduction were renewed—but although the patella could be moved on its edge, it could not be lifted out of the groove in which it rested. It was now agreed to let thh patient rest for a few hours.

11th. At 8 A.M. the consultation was resumed, and it was now pro osed to adopt, with some modification, the plan of Dr John Watson, of New York, as detailed in the *N. Y. Journ. of Med. and Surgery*, No. 2, and republished in the *Am. Jour. of Med. Sciences*, vol 25, p. 252.

The thigh was strongly flexed on the pelvis and the heel elevated. Then the leg was flexed steadily and forcibly on the thigh and suddenly straightened. At the moment of straightening the leg I pressed very strongly against the lower edge of the patella from without, with the head of a door-key well wrapped, while Dr. Addison pressed with both thumbs against the upper edge of the bone towards the external condyle. On the fourth trial this manœuvre succeeded, the bone springing into its place with a snap. A cushioned splint was placed behind the knee and secured by a bandage—an evaporating lotion was used, and the patient kept at rest. Recovery was uninterrupted, and the young man has now perfect command of the limb.

To the inexperienced it may seem that I have attached undue importance to this case, by reporting it for the medical public; but I have no fear that those who have encountered such a case will think it altogether valueless.—*Am. Journ. of Med. Sciences.*

COURT OF QUEEN'S BENCH.

MEDICAL TRIAL.—KING V. LOWE.

Mr. Platt and Mr. Chambers were counsel for the plaintiff; and Mr. Crowder and Mr. James for the defendant.

The plaintiff was a surgeon, residing in London, and the defendant was a half pay officer, and lived at Teddington. The plaintiff brought this action to recover the sum of 45*l.* for work and labour done and performed, and services rendered by the plaintiff as a surgeon to the defendant. It would seem that a degree of friendship existed between these parties. Two of the sisters of the plaintiff visited the defendant's family, and remained at his house for two months. The plaintiff went down to Teddington. The defendant at that moment was labouring under very great pain in his foot, and a surgeon had been sent for to examine it. When the surgeon (Mr. Baker) came, the plaintiff assisted him in his examination of the diseased limb. He frequently also met Mr. Baker in consultation upon the case. It was thought requisite to amputate one of the toes of the foot, and Mr. Baker performed the operation. The plaintiff continued his visits, and frequently met Mr. Baker in consultation. The disease lingered on, and the symptoms becoming alarming, Mr. Liston, the surgeon was called in, who, after two or three visits, amputated the foot. The plaintiff held the foot during the operation. Mr. Baker furnished medicine &c., and attended the defendant during the whole of his illness, and his charge was £190. Evidence was adduced to show the fact of the plaintiff having attended the defendant in the manner stated, but Mr. Baker said that he considered Mr. King attended as a friend. The case was one of a peculiar nature, and one that was of much interest to the profession.

For the defendant it was contended that the plaintiff had merely attended as a friend, and had never been employed professionally, and that this being a peculiar case, the plaintiff as a young professional man, felt such an interest in it as induced him to attend to it, and letters were put in from the plaintiff saying he should come down and spend the day with him, and should bring his wife with him.

Lord Denman, in summing up, observed that the jury must look at all the circumstances of the case, the fact of the plaintiff's sisters being on a visit at the defendant's house, and the friendly terms upon which the plaintiff and defendant must have been: they must then say whether this was a professional employment, or whether the plaintiff had not acted as the friend of the defendant throughout the whole affair, and not with a view of receiving professional remuneration.

The jury found a verdict for the defendant.

ROYAL COLLEGE OF SURGEONS, LONDON.

List of Gentlemen admitted Members on Friday, July 7th, 1843:—

S B. Denton, L. M. Goddard, T. Hunter, J. Fixott, G. Hammond, R. Culling, W. H. Hire, W. Atkin, E. C. Gibson, J. P. Symes, J. F. Grace, J. Robertson.

PERISCOPE OF THE WEEK.

(Dublin Medical Press; American Journal of the Medical Sciences; London and Edinburgh Medical Journal; Dublin Medical Journal; L'Experience; Gazette Medicale de Montpellier; Medical Gazette; Filiatre Sebezio; Schmidt's Jahrbucher; Archives de la Medecine Belge; Gazette des Hopitaux; Gazette Medicals.)

Poisoning by Colchicum.—Dr. A. T. Thomson mentions the case of an Irish labourer, who was poisoned by colchicum, prescribed for the relief of rheumatism. It was dispensed by a boy, who put six ounces of the tincture into the mixture, instead of six drachms. The poison seems to have affected the nervous and circulatory system, as also the liver and alimentary canal. Diarrhœa, epistaxis and hemoptysis were also produced. The case terminated fatally.

Phthisis and Scrophula.—Dr. Graves says when a sudden attack of cold has produced inflammation of the substance or lining membrane of the lung in a person of scrophulous habit, when the attack is recent, and has occurred under circumstances which preclude any suspicion of previous tubercular disease,—in such a case as this we shall find mercury a most admirable remedy in checking symptoms often not amenable to other plans of treatment, and which, if neglected or maltreated, would in all probability, end in phthisis. We have found mercury given to a scrophulous person increase the tendency to phthisis.

Fractures and Dislocation of the Humerus.—Mr. R. Smith mentions a case of dislocation of the head of the humerus into the axilla, with fracture of the neck. During life the prominence of the acromion was not well marked, and the arm was shortened, owing to the fracture; in the simple dislocation it is generally longer. The dislocation is of course not reducible, owing to the shaft being broken, and to wait for its re-union would be beyond the time for reduction. This was the second case of the kind seen by Mr. Smith. We remember a similar case of complication of dislocation with fracture, in which the manoeuvres for its reduction were employed for hours before the existence of a fracture was discovered. Mr. Smith also alludes to a case of impacted fracture of the neck of the humerus; the head of the bone was driven down into the cancellated structure; the subject was a woman about 20 years of age; she lived 30 years afterwards.

A fibrous structure grew from the glenoid cavity where the cartilage was deficient, and was fixed to the convexity of the head of the bone. The bone appeared first to have been broken, the head then turned round and driven downwards into the cancellated structure, in which the cartilaginous surface of the head of the bone was distinctly traceable. This is an injury not mentioned by writers.

Communication between the Pulmonary Air Vesicles and Veins.—Dr. Horner, the professor of anatomy, in the University of Pennsylvania, having removed the lungs of a young man, who had died after the operation of lithotrity, for anatomical purposes, fixed a pipe into the trachea, and permitted a column of water to pass gently, which to his surprize traversed the air cells to the left side of the heart, and was discharged from the cut branches of the aorta. No stream made its appearance from the right side of the heart, the water not shewing any current in that direction, not even in drops, nor filling the pulmonary artery. The repetition of this experiment proved the existence of a direct communication between the air-vesicles and the pulmonary blood-vessels, especially the veins. A suggestion to the contrary which may have some force is that the connexion is not by direct inosculation, but by infiltration, to which it may be replied that in such cases the injected fluid, by passing into the common connecting cellular substance, would constitute an inter-vesicular and inter-lobular dropsy, which would shew itself by the water raising up the pleura in large vesications or bags—and by its forming large inter-lobular collections—also by the incapacity of the lungs to contract to the normal size in a short time, after the pressure of the water was withdrawn, and the trachea left open. The lungs would remain at least for a time of a size nearly stationary on the suspension of the experiment, as in the carnification arising from the large effusions of blood into its substance in violent pneumonia. Now if prudence be observed in the experiment, none of these events occur, but the lungs collapse almost as readily as if they had been distended simply with air.

Acne.—Dr. Todd says the sebaceous glands are not so numerous as the sudoriferous ones; they are most abundant in the vicinity of hairs. Their form is that of small vesicular bags, which open by minute orifices into a hair follicle, or quite close to one. When sebaceous matter is suffered to accumulate in these glands, a peculiar disease of the skin is induced, called *acne*, which often shews itself on the face, nose, or forehead, and very frequently on the back. In a simple form, the accumulations are denoted by numerous black points, produced by particles of dust being entangled in the sebaceous matter, which chokes the orifices of the glands. The skin around them will often inflame, and angry pustules result. Nothing favours the excretion of this sebaceous matter so much as cleanliness and friction. If any additional arguments were wanting to enforce the propriety of adopting means for these purposes, it is derived from the curious, and in some measure humiliating fact lately discovered by Dr. Simon of Berlin, that these glands are the habitat of a parasitic insect, which has been called the *entozoon folliculorum.* This creature is of considerable size, and may exist alone, or in clusters of several, in a single gland. In the perfectly healthy state they are few in number; but when sebaceous matter, their proper food, is suffered to accumulate, they abound. Cleanliness and friction remove sebaceous matter, and therefore oppose the accumulation of these insects; and the local application of a solution of corrosive sublimate is often very beneficial in removing the points of acne, which result from the retention of the sebaceous secretion.

Ligature of the Common Iliac.—This operation has been performed by Dr. Peace, one of the surgeons to the Pennsylvania Hospital, in the presence of Dr. Randolph, Dr. Norris, and Dr. J. Rhea Barton. The steps of the operation were as follows: an incision seven inches in length was made through the integuments, commencing at a point on a level with the umbilicus, two inches within, and three inches above the anterior superior spinous process of the ilium, approaching to within an inch of Poupart's ligament, and terminating half an inch above the external ring: this divided the arteria ad eutem, which was twisted by the artery forceps; no ligature was required; the superficial fascia was next divided, then the tendon of the external oblique was exposed, nicked, and with the aid of a director was cut the whole length of the first incision as far inwards as the spermatic cord. There was considerable difficulty in raising up the lower edge of the tendon of the internal oblique and transversalis, owing to the thickening and induration of the surrounding tissues from the pressure of the tumour; this was finally accomplished by means of the handle of the knife, and a careful division of the layers as they presented themselves, until the peritoneum was arrived at, which was carefully and with some difficulty detached from the tumour, which was found to involve a great portion of the external iliac artery. The vessel was not found to be healthy until about half an inch above the bifurcation of the common iliac. It was separated from the vein by the finger nail, and a silk ligature was passed underneath from within outwards, by means of the admirable aneurismal needle of Professor Gibson. Notwithstanding the precaution that had been taken to have the bowels well evacuated, and the length of the first incision, it was some time before a view could be obtained of the curve of the needle still held under the artery, on account of the projection of the tumour and the protrusion of the abdominal contents. By means of broad curved steel spatulas, and by drawing forwards the artery by the aneurismal needle that was underneath, Dr. Peace got a view of the common iliac artery and the iliac vein underneath, on the side of the sacro-vertebral promontory, with the ureter crossing the artery, and attached to the raised peritoneum. The ligature was without the slightest difficulty passed out of the wound by the watch-spring of the needle, and was tied with a simple double knot; both ends of the ligature were allowed to remain hanging together from the wound. The pulsation of the tumour immediately ceased, and its volume sensibly diminished. The edges of the wound were brought together by three interrupted sutures and by adhesive plaster, and dressed with lint spread with cerate, and retained by two adhesive strips. The patient was removed to his bed, placed on his back, his leg slightly raised by a pillow under the knee, the shoulders raised, and the body flexed and inclined towards the affected side. The needle was placed under the artery in seventeen minutes, but thirty minutes more were required before the patient could be removed to his bed. The ligature came away on the 35th day.

Rupture of the Internal Jugular Vein.—A little boy, 4 years of age, had an abscess form on the right side of the neck, below the lobe of the ear, consequent on the sudden disappearance of the eruption of scarlatina, which, in a few days, pointed and burst. Three days afterwards, his attendant observed blood running down from beneath the dressings, on removing which two jets of blood were forcibly propelled on the face of the servant. Surgical assistance was sought for, and Mr. King was called in by the usual family attendant: on examination, the walls of the abscess were found to be very tense, with blood flowing in a free stream, uncontrolled by pressure on the carotid; the pulse was extremely quick and feeble, and occasionally intermitting, the countenance pale and blanched. The tumour occasioned considerable difficulty in breathing, and brought on occasional severe paroxysms of coughing, during which it became exceedingly firm and prominent. Uncertain as to the source of the hæmorrhage, the effects of compression were tried, but unavailingly; indeed, sufficient pressure could not be sustained on account of the impediment it offered to respiration. The bleeding continued—the walls of the sac became more distended, and when, shortly after, the bandages were partly removed,—the child was seized with a violent paroxysm of coughing, during which the abscess gave way to the extent of two square inches. A thin coagulum, about the size and thickness of a crown piece, was ejected, followed by an immense gush of blood. A state of syncope soon followed, and the child expired. On examination of the parts afterwards, and on cutting through the substance of the parotid, which was sound and healthy, and the posterior be'ly of the digastric muscle, a very distinct view of the source of the hæmorrhage was obtained. Nine-tenths of an inch of the external wall of the internal jugular vein, commencing two lines below the base of the skull, and extending downwards, were completely removed, as if by a sharp scalpel. The internal wall, and even the margins of the opening were perfectly healthy, and of the normal pearly-white color. The common carotid, at its division, was exposed by removing a little healthy cellular structure, and shewed no appearance of disease: the walls of the abscess were examined in every direction, and found to be healthy, and an incision, two lines in depth at every point, displayed the surrounding structures in a natural state. Permission could not be obtained to examine the viscera. In this case, had the condition of the patient permitted, a ligature could not have been applied between the laceration and the base of the skull, even granting that the internal jugular vein could be tied with impunity.

The Hydrostatic Test.—Four objections are urged against the floating of the lungs in water, being regarded as a proof of the infant having lived after birth: 1st, it may breathe and die before delivery,—which may be established by the nature of the labour, as it is only in difficult labors, from certain unnatural presentations, that this most unusual phenomenon can take place: if the labor was easy and natural, this plea is a false one. 2ndly, putrefaction may render the lungs specifically lighter than water; and 3rdly, so may the emphysema described by Chaussier, but both these are easy to detect. In putrefaction the air exists only in the cellular tissue, and when squeezed out by the hand, the lungs will not float in water. The situation of the air can also be detected by examination under a microscope. With respect to emphysema, Dr. William Hunter says, if the air bubbles be large, or if they run in lines along the fissures, between the component lobuli of the lungs, the air is certainly emphysematous, and not air which had been taken in by breathing. The 4th objection is, the mechanical inflation of air, either to save the child, or to attach the charge of child-murder to an innocent person.

Wildberg and Beclard stated, that air thus introduced can be entirely squeezed out, but this is incorrect. Dr. Cormack, however, believes from observation, that where inflation has been practised to an extent sufficient to cause the lungs of a still-born infant to float, careful examination will disclose ruptured air-cells, and probably distention of some of the interlobular spaces, with bullæ under the pleura pulmonalis.

Cure of a Large Hydrocele.—Napoleon Agostini, a Corsican sailor, labouring under a large hydrocele of the left side, was on shore with some comrades in a public house at Toulon, when a quarrel arose in a drunken fit, and he was stabbed with a knife by one of them in the left side of the scrotum, the testicle hanging out of the wound which allowed the escape of the fluid. It was dressed the next day, the parts being retained in situ by four points of suture. Moderate inflammation set in, and a cure was effected in a fortnight, both of the injury inflicted, and of the hydrocele.

Onychia Simplex et Maligna.—An interesting communication on morbid affections of the nail of the great toe, has been published by Dr. Colles of Stephen's Green, in which he describes first, that form of fungous ulceration described by writers under the title of "*The Nail Growing into the Flesh*," and lastly malignant onychia. With regard to the treatment of the former disease, he objects to the use of caustics, and to the operation advised by Sir A. Cooper, Dupuytren, and Liston, which consisted in passing one blade of a scissors beneath the nail, from its anterior edge up to the root, then cutting through the entire length of the nail, next seizing the outer segment with a strong forceps, and by means of these tearing it off the toe. This proceeding is exquisitely painful, because the nail is not, as in onychia, separated from the vascular and highly sensitive matrix, except to a small extent, and the passing of the blade of the scissors and the forcible evulsion of the nail consequently give rise to excessive suffering. The operation recommended by Dr. Colles is much more simple, and comparatively free from pain; the excision of the nail is practised only so far as it is already detached from the matrix; all that portion, as well as that imbedded in the fungus must be removed. This is effected with the aid of a strong pair of forceps like the torsion forceps and a pair of strong crooked scissors. The only dressing required afterwards is a small bit of dry lint, which is to be pressed firmly with the probe between the fungus and the edge of the nail. It will remain dry and need not be changed till the fourth day. A cure is effected in ten days or a fortnight. It sometimes happens that four or five days after the operation, the patient will complain of some uneasiness in the toe, the dressing will be moistened with a little discharge, and there will be a small portion of a whitish substance, like soft and swollen leather, rising up through the fungus, a sort of accessory ungual filament, arising close to the original nail from the anterior and outer border of its matrix; it is soft, so that it breaks and tears if seized with the common forceps; for its removal the torsion forceps and curved scissors must be used. Malignant onychia has been hitherto treated only by excision of the diseased matrix, but there is reason to hope that this very painful operation may be superseded by the plan of treatment advised by Dr. Colles. He confines his patient to bed, cleanses the ulcer by a poultice and a stream of warm water directed on it from a height, cuts away as much of the loose nail as possible, without paining or irritating the sensitive surface around, and then fumigates the part night and morning, by means of the mercurial candle, containing ℈i of the hydrargyrum sulphuretum rubrum to two ounces of wax. The toe is to be wrapped up in soft linen smeared with spermaceti ointment, after each fumigation. Improvement will take place in four or five days, and a cure will be effected in three or four weeks. During the treatment all projecting portions of nail must be closely cut. In proportion as the ulcer improves, so does the condition of the growing nail; it acquires not only its natural firm and horny consistence, but also assumes its proper horizontal direction. For some time after the general surface of the ulcer has healed, there still remain small spots of ulceration, generally at the angles, around some white germs of new nail; against these points the full force of the mercurial vapour should be directed; this can be effected by adding a small conical ivory tube to the funnel. Absolute rest is requisite during the treatment. Dr. Colles is convinced that even in cases where this plan does not effect a cure, it will never fail to improve the condition of the ulcer, and of the surrounding parts, reducing the enlargement and removing the deformity of the toe, so that, even should the operation be ultimately necessary, the surgeon will be better able to ascertain the exact situation and extent of the disease, and thus by a single operation, remove the whole of the matrix so effectually, as to secure the patient against any relapse.

Contributions to Anatomy and Physiology.—In a communication published under this title, Dr. Knox, of Edinburgh, makes some remarks on the structure and arrangement of the spinal arachnoid, in contravention to the statements published in the work of Mr. Viner Ellis. The last-named gentleman, in the "Dissection of the Spinal Cord," in describing the sub-arachnoid space, says it is divided into a right and left portion by a septum extending along it. This Dr. Knox denies, after the examination of the spinal cord a hundred times, and he adduces, as negative evidence, Cruveilhier, and the learned authors of the Encyclopedie Anatomique by neither of whom is it mentioned. He says, on laying open the spinal column in the usual way, by removing the arches of all the vertebræ from the atlas to the last sacral, and incising cautiously the dura mater, the visceral layer of the arachnoid presents itself. If this be punctured, and a blow-pipe introduced into the sub-arachnoid space, air may be blown in with the greatest ease, so as to fill large portions of this space, of some inches in length, and extending quite across the medulla—or, in other words, from side to side: the examination of the same aspect of the membrane, under water, gives precisely the same result. Thus, the septum has no existence as a complete septum, and Dr. Knox thinks its existence as an incomplete one very doubtful. Mr. Ellis further considers that a serous membrane, lining the ventricles, passes through the fissure of Bichat, to communicate with the posterior sub-arachnoid space of the brain, and through an aperture in the fourth ventricle to communicate with the anterior spinal sub-arachnoid space. This membrane, he says, is separable from the arachnoid, and may be raised with care, as a thin membrane, from the cord, roots of the nerves, and ligamentum dentatum. The assertion of these communications Dr. Knox considers to involve a physical impossibility, or nearly so. If the arachnoid be traced upwards towards the medulla oblongata and cerebellum, it will be found that the parietal layer of the arachnoid generally adheres with sufficient firmness towards the lower end of the medulla oblongata, as to prevent the passage of air upwards into that large sub-arachnoid space formed by the sudden passage of the arachnoid across to the cerebellum, leaving thus a large space immediately behind the fourth ventricle. If the arachnoid be very cautiously opened, where it forms the posterior wall of this space, another membrane will be found, either close to it, or separated by a considerable quantity of filamentous tissue; this membrane Dr. Knox believes to be a layer of the pia mater, or proper membrane of the medulla spinalis and oblongata, which quits the medulla along a line more or less distant from the margins of the calamus to reach the cerebellum by a nearer point; it varies in its position, and often seems to be merged in that deeper layer of the spinal neurilema which, approaching the aortic margins of the calamus, passes from these to the vermiform process, and, aided by the valves of Tarrin, completely shuts in the fourth ventricle behind, cutting off all communication between the fourth ventricle and the posterior sub-arachnoid space. The aperture of the fourth ventricle, then, must be generally artificial, although it is not impossible that a deficiency may occasionally exist in the pia mater, as it shuts in the ventricle. The internal arachnoid can communicate with the sub-arachnoid spaces only at two points, the great cerebral fissure, and the pretended foramen of Magendie, both of which are closed in by the pia mater, so as to prevent any such communication, and thus render it physically impossible that any serous sac can pass across the brain by the wall of the ventricles, as decribed in Mr. Ellis's work.

Hemiplegia cured by Quinine.—Dr. Midavaine, garrison surgeon at Liege, has published the particulars of a case of hemiplegia following an attack of apoplexy, and accompanied by intermittent cerebral pains, which he treated successfully with large doses of quinine. His patient was a soldier, 36 years of age, of a very nervous and impoverished constitution, lymphatico-bilious temperament, and slightly developed muscular system. His parents were healthy, and he himself had never been ill, previous to his becoming a soldier in 1823. In the month of April, 1841, he was seized with apoplexy, which was followed by hemiplegia and difficulty in speaking. For two months preceding his admission into the military hospital, he was treated by bleedings, blisters, pediluvia, &c. When seen by Dr. Midavaine, besides the symptoms just mentioned, he had a full hard pulse, formications on the paralytic side, and severe continued head-ache, extending transversely from one temple to the other, the face drawn on one side, complexion yellowish, and complete nervous depression. Bleeding, blisters, sinapised pediluvia, frictions along the spine, &c., were employed without advantage, for nearly three weeks, when the head-ache became intermittent, occurring only from six or eight in the evening until midnight, or four in the morning. The administration of twenty grains of sulphate of quinine was followed by the cessation of the pain for two days; but it reappeared on the third, when thirty grains of quinine were given, the pain ceasing, and motion returning in the hemiplegiac extremities. A slight return of the pain having been experienced in a few days, forty grains caused its complete removal, and the restoration of the speech and motion to its normal condition. The removal of the pain was in this curious case clearly owing to the exhibition of the quinine, but its modus operandi in curing the hemiplegia is very difficult to explain. Dr. Midavaine is of opinion that there was serous

effusion, the cause of the compression, and that it was subordinate to the pain, the cure of which effected the removal of the effused fluid. This is, however, very doubtful. He is inclined to attribute the primary attack to venereal excesses. The doses in which he exhibited this heroic remedy, were certainly enormous.

THE USE OF MUSK IN DELIRIUM COMPLICATING INFLAMMATORY AFFECTIONS OF THE CHEST.—Musk, which has been one while praised as a most valuable medicine, and at another condemned as utterly useless, has been recommended by Recamier, and other physicians in the treatment of the delirium, which accompanies acute or typhoid pleurisies and pneumonias. Dr. Debourge of Rollot, has also employed it in several such cases with advantage; one of these was that of a man, 63 years of age, of a large frame and strong constitution, who had a very severe attack of acute pneumonia, which had twice relapsed. On the 17th night of his illness, he was seized with violent delirium, the face remaining pale, and the heat of the scalp not increased; the pupils were obedient to the light, the pulse small, hard, and frequent, the tongue pale, large, and moist, and the abdomen free from pain on pressure. The examination of the chest by the stethoscope and percussion was equally satisfactory. Under these circumstances, and bearing in mind the depleting and revulsive treatment the patient had been subjected to, musk was prescribed in the form of a pill, containing two grains, every three hours, with marked benefit. After the seventh pill, the patient slept for several hours, and the delirium ceased. He took three pills afterwards at intervals, and in eight days he was entirely convalescent. The musk used by M. Debourge was the best Tonquin musk, as he considers it to be the purest met with in the market.

IMPERFORATE CERVIX UTERI.—Dr. Becasseau, a surgeon at Liege, was consulted by a young woman, who had never menstruated, and who, until her 23d year, had not experienced any symptoms resulting from the non-appearance of the catamenia. She then suffered at fixed monthly periods from hypogastric and lumbar pains, with a feeling of tension in the uterus, accompanied by nausea, vomiting, syncope, dyspnœa, hysterical, and epileptiform fits. These symptoms, after continuing 4 or 5 days, were succeeded by an abundant expectoration of red blood. Bleeding alone afforded any relief. Exhausted by her sufferings, and alarmed at the quantity of blood expectorated, the patient called in Dr Frankinet, who, finding the lungs healthy, after a very careful examination, required a consultation with Dr. Becassean, by whom an examination of the genitals was instituted. The cervix uteri was found to be covered by a membrane apparently springing from the vaginal mucous membrane, but of a cellulo-fibrous texture: it was perfectly transparent, and the cervix could be distinguished through it, appearing as an imperforate gland There was neither hymen nor carunculæ myrtiformes. As the time for the menstrual disturbance had passed by, it was determined to wait until the next period, with the view to ascertain whether the uterus contained a cavity, and was affected by the menstrual action, as otherwise an operation would be useless. When that period arrived, the uterus could be distinguished tumefied, and very sensible to pressure, and the membrane could be seen by the aid of the speculum projecting into the vagina, of a brownish-black colour, and presenting an appearance as if some dark blood were filtering through it. Under these circumstances, it was determined to operate the next day, which was accordingly done by Dr. Becassean. The patient having been placed on a mattrass, and the thighs separated, as for the application of the forceps, the speculum was introduced, the membrane drawn down by a long pair of forceps, and excised altogether. The cervix was then examined, but no os uteri could be discovered, a slight depression only marking the spot where it should be found. Dr. Becasseau then plunged a trocar, covered with a gum elastic catheter, previously oiled, through the tissues, in the direction of this orifice; scarcely had it penetrated into the organ, then several fetid clots of blood escaped, and a hissing sound was heard, caused by the gases which had been enclosed in the womb. The trocar was then withdrawn, the catheter pushed in as far as possible, and injections thrown up to dissolve the remaining clots of blood, after which the catheter was removed, and a piece of sponge inserted; cicatrization was complete at the fortnight's end. At the next monthly period, the patient menstruated *per vias naturales*, the expectoration of blood continuing, but to a much less extent than previously. Eight months after the operation, the patient continued to menstruate naturally, a little blood still passing from the mouth, which, however, no longer gave her any cause for fear.

INJURIOUS EFFECTS OF IODINE.—Mr. Rawson, of Kegworth, Leicestershire, mentions two cases in which the long-continued use of iodine was productive of injurious effects. In the second case, superficial ulceration of the mucous membrane of the vagina, and probably of the lining membrane of the rectum, with a considerable purulent discharge, was induced. In the first case, which is not a very clear one, the presumption is, that mischief was excited in the pulmonic apparatus. Mr. Rawson remarks, as the mucous membranes are so readily disposed to ulceration, one might, *a priori*, anticipate such an effect from the long-continued use of remedies acting especially on the absorbent system, and he asks, could the local application of the iodine (it was used in the form of iodine ointment on the abdomen, as well as given internally) in the second case, determine the action of the medicine more particularly to the lower mucous surfaces? He adds a caution as to its use in the treatment of consumption, if its employment induce ulceration of the mucous membrane. Burnt sponge, the active principle of which is iodine, was formerly supposed to have frequently caused phthisis.

NEW ASTRINGENT PREPARATION.—By digesting rhatany in sulphuric ether a brown extract is obtainable, perfectly soluble in distilled water, and when placed on the tongue giving a sensation of great astringency, followed by heat and dryness. This extract, invented by a M. Tissier, of Lyons, has been employed with success in that city in passive hæmorrhages, particularly those consequent on non-contraction of the uterus, as after prolonged labours and miscarriages. It has also been used with advantage for leucorrhœa, blennorrhœa, gleet, &c, The dose in which it has hitherto been employed is a tablespoonful of a mixture composed of from five to ten grains of the extract in six ounces of some appropriate vehicle; in leucorrhœa, topical injections are recommended of from two to five grains of extract in a pint of barley-water. The presence of this preparation in the stomach gives rise, generally, to a sensation of heat in the epigastrium, though this rarely proceeds so far as to become painful; great thirst, and a pulse often as full as in gastritis, also prevail. These symptoms are, however, transient, and readily quelled by lemonade or other mild drinks. Should the injection irritate the urethra too greatly, it is only necessary to suspend its use for a short time.

STATISTICS OF LITHOTOMY.—In the five years, 1836 to 1840 inclusive, twenty-four operations for stone in the bladder took place at the Hôtel Dieu in Paris. In six of these, which were cases of lithotrity, all the patients survived. Of the other eighteen cases, in which lithotomy was performed, eleven were attended with perfect success, and the recovery of the patient, but the seven remaining terminated in death, in one case two months after the operation, and in the rest only from two to five days. In these seven, two of the patients were upwards of seventy years of age. Of the whole twenty-four individuals operated on, thirteen were from three to twenty-five years, three from twenty-five to fifty years, and eight from fifty to seventy-five years of age;—a proportion which seems to indicate that calculus is more frequent in youth than in age, and that middle life is nearly exempt from its access. In 1841 six patients were operated on in the same hospital by M. Roux, on four of whom lithotomy, and on two lithotrity was practised. The mortality in this year was greater than in any of the five preceding; five out of the six patients died; and the case of recovery was one in which lithotomy had been employed.

TREATMENT OF SPINAL PAINS IN CHRONIC INTERMITTENT FEVER.—The local pains along the vertebral column which have frequently been observed as an accompanying symptom of intermittent fevers, have been ascertained, by Dr. Gouzèe, of Antwerp, through the medium of experimental pressure, to originate more particularly about the place of the third, fourth, and fifth dorsal vertebræ; and the remedial agents recommended by him, in obstinate intermittents attended by spinal pains, consist of cupping and leeches in the dorsal region, followed by counter-irritant plasters of tartarised antimony. The doctor informs us that this treatment has, in his hands, been very generally successful; but, says the "Gazette des Hopitaux," we must confess that the method is so unusual that further experiment is necessary ere it can be recommended for general adoption.

DROPSY AFTER SCARLET FEVER.—Dr. Cathcart Lees states that although this form of dropsy chiefly affects the subcutaneous cellular texture, yet it may pervade that tissue throughout the entire body, and thus assume a truly formidable character The most frequent source of danger arises from the effusion of fluid into the chest, chiefly into the cellular substance of the lungs, or into that in the cavity of the thorax: in this form the external œdema is greater than in any other following scarlatina. The urine is generally highly albuminous.

CAT'S MINT.—The *Nepeta Cataria* of Linnæus is recommended by Dr. Guastamacchia, as a sovereign remedy for tooth ache, whether it proceeds from catching cold, or from caries. The leaves of the plant are placed between the afflicted tooth and the opposite one: this causes a copious flow of saliva, and in two or three minutes the most violent pains are relieved. If the patient cannot keep the leaves in contact with the diseased tooth, he must chew them, and the object is equally attained by the flow of saliva thus excited.

HŒMOPTYSIS.—The fact appears to be overlooked by pathologists generally, that the bright colour of the blood in hœmoptysis, and the more superficial position and greater number of the pulmonary capillary veins, indicate that they are the true fountains of its blood instead of the arteries. These opinions have been taught by Dr. Horner for many years past.

Dislocation into the Ischiatic Notch.—Mr. Syme says, that, according to his experience, there is a feature of this accident which is never absent, always well-marked, and not met with in any other injury of the hip-joint, whether dislocation, fracture, or bruise. This is an arched form of the lumbar part of the spine, which cannot be straightened so long as the thigh is straight, or on a line with the patient's trunk. When the limb is raised, or bent upwards upon the pelvis, the back rests flat upon the bed; but so soon as the limb is allowed to descend, the back becomes arched as before. By attention to this symptom, he has been enabled to recognize the existence of dislocation into the ischiatic notch, when it had been unnoticed by others; and, on one occasion, when it was supposed that the replacement had been effected through powerful extension by the pulleys.

Supernumerary Kidney. — Professor Hyrtl, of Prague, discovered, in the dead body of an old woman, a third kidney situated near the left sacro-iliac symphysis, equal in volume with the other two, having three arteries, the largest arising from the angle of bifurcation of the aorta, the other two from the left common iliac, and having also three veins terminating in the iliac vein. It had two calices opening into its pelvis, and the ureter, which was about the size of a crow's quill, passed parellel with the left ureter, to the bas-fond of the bladder, where it had an independent opening.

Radical Cure of Hernia.—Mr Parsons of Bridgewater, narrates the case of a man who had congenital reducible inguinal hernia of the right side, for which he had never worn a truss; one day, after having been engaged in lifting heavy batches of mud, in constructing a mud wall, the hernia redescended and he could not return it; failing to do so, he made a sudden gash across the neck of the swelling with a razor, which was followed by the discharge of a dark colored fluid, and by considerable hæmorrhage. The wound was dressed; indications of peritonitis set in, but were checked by calomel pushed to the extent of slightly affecting the gums, and the man rapidly became convalescent. The hernial sac afterwards suppurated, and filled up by granulations, which perfectly prevented any future descent of the hernia.

Liquor Plumbi Acetatis.—M. Leroy advises the following mode of preparing Goulard's extract, to avoid the possibility of the introduction of copper. He places three parts of crystallized acetate of lead in a porcelain capsule or a glazed earthenware vessel, with nine parts of distilled water; the mixture is gradually raised to the boiling heat, when it is withdrawn from the fire, and one part of pulverized litharge added by degrees, the liquid being continually stirred; the solution of the litharge is effected in a few minutes, and the liquid is then to be filtered. It always marks 30 degs. of the areometer.

Hydrencephalus.—M. Seyffer of Heilbronn has employed iodine and its preparations internally and externally in the treatment of acute hydrencephalus with considerable advantage. He regards the complaint as essentially connected with the scrophulous diathesis. If there be severe pain in the frontal region, with a red face, and a very contracted pupil, M. Seyffer applies one or two leeches.

Scrophula.—M. Manthner, a physician at Vienna, has found a tincture and an extract prepared with the l aves of the noyer, very serviceable in the treatment of scrophulous disease of the skin and glands, but not in cases of diseased bone. He considers the leaves of the noyor possessed of undoubted efficacy.

London: Printed and Published by JAMES ANGERSTEIN CARFRAE, 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex.—July 15, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 200. Vol. VIII. LONDON, SATURDAY, JULY 22, 1843. PRICE FOURPENCE. Stamped Edition 5d.

SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE V.

From the conclusion arrived at in our last lecture, it results that, in the inferior regions of our atmosphere, the compound atom of quadri-azotized oxygen possessss a layer of caloric less voluminous than in the region immediately superior, and so on progressively and in an unlimited manner. The higher we rise, the less of oxygen and nitrogen is introduced by respiration, in a given volume, into the capacity of the lungs Continue this incessant progression, and we shall be compelled to admit, in opposition to the received opinion, that our terrestrial atmosphere, instead of being abruptly limited at a distance of fifteen or twenty leagues from the earth, extends itself until it comes in contact with the lunar atmosphere. The moon, that atom which revolves around our terrestrial atom, in the same way as, in the formation of the watery element, the atom of oxygen revolves around the central atom of hydrogen, until the respective layers of the two atoms attain an equality of diameter, from which results their repose: the moon has then, also, an atmosphere, of which the aerial atoms augment in volume, by their layer of caloric, in proportion as we recede from the centre of this satellite of the earth, in a progressive manner, until we reach the boundaries where the two atmospheres touch. It might be objected to this idea that the observation of the occultations of the stars, by the disk of the moon, at no time indicates, by the phenomena of refraction, the existence of the least atmospheric stratum around the moon. This objection rests on the false idea that has been formed of the atmospheric limits. Undoubtedly, if the atmosphere terminated abruptly, and so continued for a distance of nearly 86,000 leagues, by virtue of the laws of refraction, it would result that, in the case of occultation of the stars by the moon, we should obtain an evidence of the lunar atmosphere, by the diversity which the image of the star would present, when first appearing to the eye, through this highly refractive medium; and, if such were not the case, one would then be entitled to assert that the moon possessed no atmosphere. But all this reasoning vanishes before the new idea, that the atmosphere of the earth, formed by strata progressively lighter, osculates the lunar atmosphere, formed also according to laws of the same progression; and that the two atmospheres become confounded together upon the line of contact, by the identity of the strata of caloric which envelope their atoms. For, when two optical systems become confounded together and make but one, we have resulting an achromatism and unity of image, and not a difference of refraction. The star which we observe does not enter abruptly into the atmosphere of the moon, but in a progressive manner, and without our being able to define the instant in which we see it through our terrestrial atmosphere, and that in which we see it through the two atmospheres combined. Moreover, according to the principles elsewhere demonstrated, we cannot imagine a solid body, in space, without its being surrounded by an atmosphere at first liquid, then fluid, and further off of an ethereal character; the solid part of this system being but the result of the compression of the atmospheric portion, and being itself of necessity resolved into air, if, by supposition, the original atmosphere should suddenly disappear and leave an empty space. Every body, then, existing in space, must be surrounded with an atmosphere organised upon the physical type of our terrestrial atmosphere, and having no other limit but the point of osculation, if I may so express myself, of the atmospheres which it attracts or of the atmosphere which has attracted it, that is to say, in other words, of the atmosphere of its sun or of those of its planets and satellites.

We now come to another point, which may be considered as a corollary of the foregoing. Since the atoms tend more and more to augment the layer of caloric, which forms their atmosphere, at the expense of the central atom, around which this exchange causes them to gravitate, by revolving one around the other; since, in fine, the atoms most abounding in caloric are always, and by the simple fact of their volume, at the periphery of the atmosphere, at the surface of the aerial and gaseous ocean, it necessarily follows that the proportions in number of the attendant atoms as compared with the central atom, must vary progressively, from one stratum to another of the planetary atmosphere. At the surface of the aerial ocean, the central atom of oxygen must be surrounded with a greater number of attendant atoms of nitrogen than upon the surface of the earth itself; for it is the nature of the central atom to have a sphere extending over a greater diameter than that of its satellites, at the moment in which it attracts them within its orbit. On the other hand, the central atom must terminate by surrounding itself with as many satellites as the relation of their respective diameters will allow of. Thus, at that point where the oxygen or central atom shall have the greatest diameter, it will have also the greatest number of attendant atoms of nitrogen; the atomical relation of the oxygen and the nitrogen, in the group of quadri-azotized oxygen, will then vary progressively from the surface of the earth towards the surface of its aerial ocean; the proportion by weight of oxygen diminishing, the higher we mount and the more the atmosphere becomes rarified, by an increase in diameter of its spherical layer of caloric, the proportion of nitrogen increasing in the same direction and in an equal ratio.

For the same reasons, the gaseous or vapoury emanations, of a specific gravity greater than that of the air, must be located on the surface of the earth and of the sea—that is to say, in the lowest strata of the atmosphere; and if they become more elevated, this can be accomplished only by the movements of the air, or else by augmenting the volume of caloric which surrounds their atoms, and consequently increasing their lightness; or, lastly, by their undergoing, through the electric influence of the solar ray, new synthetical transformations and analytical decompositions which bring about, between their molecules and those of the superior strata of air, a more or less complete identity. The watery vapour which disengages itself from the surface of the sea, the rivers, and the pools, and which becomes dispersed in the air, ceases to be susceptible of condensation into clouds, above a height of about 16,000 metres (more than three of our leagues); and these clouds fall in the shape of rain only when they have descende into the lower regions of the atmosphere. The watery vapour which passes beyond the above elevation is undoubtedly resolved up there, by a series of ultimate decompositions, into its original elements of an imponderable fluid or rarefied air. We do not know experimentally what passes on at that height; for the greatest elevation which our aeronants have ever reached, has been but 7,600 *metres* (a league and a half). On the other hand, it is evident that the more we recede towards the horizon, from the focus of the gaseous or vapoury emanations, the less shall we be exposed to the effects of their influence; and that at a certain distance, variable according to meteorological variations, the air will be found entirely pure.

Organization, that kingdom in which individuals are formed from the association of carbon, and of water with earthy, or nitrogenized bases, into a vesicular crystallization, endowed with the wonderful property of developing and propagating themselves indefinitely, by an incessant series of internal and external generations, organization is formed, and takes its origin upon the surface of the globe, at the expense of water or of moisture on the one hand, and of the gaseous elements of the atmosphere on the other. A common and mysterious bond, an intimate and conjugal union of all that our planet possesses of the most gross as well as of the most refined character; a spirit active, intelligent, and fertile; a creature and a creation, a parasite as well as a parent, incessantly consuming and incessantly restoring, it adorns the universe without impoverishing it; it gives to it its richness and its beauty, its wants and its resources, its harmony and its life. Organisation being the immediate result of our atmospheric constitution; its strongest evidence would be given, should the changes brought about in the physical state of our globe lead to the complete disappearance of the actual organisation, replacing it, perhaps, by an organisation of a totally different nature, where these changes might take the character of a complete and general revolution; or else should they induce in the habits and properties of organisation, more or less important modifications, according to the importance of the modifications in the solids and in the air. The collision of our planet with a comet, is, probably, the only cause which could lead to its disorganisation and annihilation; for this circumstance alone is capable of impregnating the solid atoms of our globe with that increased development of caloric, which would transform its elements into combinations of a new character. In the absence of this cause of extermination, our planet must follow its physical development, by virtue of the slow and progressive impulsion (slow as compared with our momentary existence which seems to us so long), by reason, I say, of the impulsion given to it by the stratum of caloric enveloping the central atom, our sun: a stratum from which our planet derives its own caloric, in a regular, uniform and mathematical manner, and which thus causes it to revolve around this central atom three hundred and sixty-five times, *plus* six hours, nine minutes, and nine seconds, by following the ecliptic, before reaching its original starting point, upon this grand circle. Our planet thus modifies each day its atmospheric constitution, by enriching its surrounding stratum with an ethereal fluid at the expense of the stratum surrounding the sun; a modification which reasoning demonstrates, although it cannot be experimentally shewn to our senses or perception, inasmuch as history and tradition go back for scarcely four thousand years, a space of time during which the induced modification would be too slight to be sensible to any of the instruments of our laboratories. But once having admitted that our planet daily modifies its constitution, it follows as a necessary consequence that organisation mo-

difies its forms and its properties by a constant law of progression.

The atmospheric constitution not being uniform, the relations of oxygen and of nitrogen varying according to the elevation, and the purity of the air changing according to the proximity of certain focuses of infection, it further results that the physical state of organised beings must actually vary, by reason of the concurrence of these different circumstances. In fact, organization in elevated positions, where the air is more pure and more rarified, and contains less oxygen in the same volume, organization has not in these positions the same characters as in the valleys, in the arid plains as upon the borders of rivers or of pools of water, &c. These differences constitute the normal state of each respective locality. When this normal constitution becomes altered in a locality, and the normal state of organization is disturbed and receives a check, disease succeeds to health, until the organization becomes shaped to this new atmospheric constitution. This result is more perceptible in reference to animals, and especially to plants, than in man, whose creative genius finds in its own resources, correctives for all anomalies, compensations for all privations, equivalents for all that is absent, resources for all his wants and desires, shelter against all evils, that is to say, remedies against all causes of disease, and who, in fine, equipoises the different constitutions of the atmosphere which surrounds him, by the power of his civilisation. Still, despite of the resources of his power and industry, he is not able to withdraw himself entirely, and in a lasting manner, from the inexorable laws of the atmospheric constitution; for it is not in his power to make the same cause produce a different effect, nor the same effect to issue from two different causes. The man of the mountains is different from the man of the plains; and if he can descend there and dwell with impunity, by reason of the changes which he adopts in his regimen, and which serve, so to speak, as a seasoning and corrective to his new mode of life, it is not the less true that his type becomes effaced in the generations which he procreates, and that the children of the mountaineer become confounded, by the second or third generation, with those of the inhabitants of the plain. Every thing alters, when it changes its atmosphere; and under this view, emigration, or a return to one's native country, may become a remedy or a poison.

Every subtraction, as every gaseous addition to the atmosphere which surrounds us, is a direct cause of *asphyxia*, a more or less immediate cause of death, according to the proportions of the mixture; and that even where the new gas may appear inert and incapable of disorganising our tissues. If the lungs do not receive what is sufficient for their elaboration, they cease to produce the same results, they cease to furnish, to the incessant development of the individual, a development which we call *nutrition*, the organising elements which are indispensable to it. Life no longer repairs what is destroyed; the being approaches towards decay, it dies.

The introduction of the atmospheric air into the organ which is destined to elaborate it, is named RESPIRATION, a function which is composed of two alternate actions, *inspiration* and *expiration*. Under this general view, the plant respires as well as the animal, the fish as well as the man. But, in respect to its mechanism, respiration differs according to the kingdom of organised nature; and the various individuals of each kingdom can live but in the same medium, without any modification. The fish becomes asphyxiated in the air which we breathe; man cannot respire the water in which the fish lives; so also the river-weed dies in the air, and the ground-plant in the purest waters. In natural history, these form essential differences and lines of demarcation; in general physics, they are but modifications of the same function, a function identical as to the respiratory cell, but different as to the vehicles and the mode of introduction of the air. In fact, all the individuals of the different kingdoms respire atmospheric air: but the respiratory organs of the one kingdom are only capable of respiring air through the vehicle of the surrounding water; while the same organs in others can respire only in the air itself. Such is the difference which appears well defined at first view, but which nevertheless becomes gradually effaced on a rational estimation of facts, until it assumes the characters of a simple modification of the same phenomenon; and we arrive at this conclusion, that, in the medium whether of the atmosphere or of water, the air can only be inspired and expired by the respiratory organs through a watery vehicle. The terrestrial animal would be asphyxiated in a very dry air, however pure, unless it found in the necessity of quenching its thirst, which warns it of the danger, and in the secretion of its salivary glands, a means of preserving, with a certain degree of constancy, the hygrometricity of the air which, in passing the cavity of the mouth, becomes impregnated with moisture, previous to its being distributed to the pulmonary surfaces. But how is it that the aquatic animal does not respire in the atmospheric air, respiration taking place equally in the vehicle of water? This arises solely from the difference of position of the respiratory organ in the two classes. In aquatic animals, the respiratory organ is placed at the surface of the body, naked, or merely covered with a scaly process, which protects it against foreign bodies, but which, immediately that it opens, places the respiratory organ in direct contact with the surrounding fluid. In aerial animals, on the contrary, the respiratory organ is placed deep in the thoracic cavity, which communicates with the external air only through the medium of a long tube, the opening of which is, moreover, situated at the extremity of the mouth which exhales, by a number of pores, the moisture necessary for the performance of this function. If the gills of the fish were enclosed in a cavity, with a single and narrow opening, then would it, by this modification of its apparatus, be susceptible of respiring in the air like man; for the gill is but an uncovered lung, while the lung is nothing but a gill protected, against the evaporative action of the air, by walls which allow the air to reach it only when impregnated with moisture, which serves it as a vehicle, and fits it for the function of aspiration.

As to aquatic and terrestrial plants, we may say, that they are all more or less amphibious; the terrestial plant being aquatic by reason of its roots, which would perish if exposed to a constant dryness, and aerial by means of its leaves, which would rot and become watery from constant moisture; the aquatic plant, also, having always a certain number of its leaves or organs spread out on the surface of the water, to respire air, after the manner of terrestial plants. These considerations fully bear out that axiom which Linnæus applied in an especial manner to his systematic classification: nature never proceeds by fits and starts: *natura non facit saltus*. Physiology may thus be termed a continuous chain, whose rings are formed by different gradations and modifications.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

WE were yesterday considering the physical signs of pleurisy in its acute state, and now proceed to the varieties of the asthenic and chronic forms. In reference to the physical signs of pleurisy, I noticed the dullness arising from the effusion of liquid, and I stated that the friction-sound was heard at the very commencement of the disease, and was dependant on the presence of a little lymph on the surface of the pulmonary pleura, causing a rubbing against the costal pleura. But, generally speaking, the liquid effusion is such as to separate the parts which would be covered with lymph, and, therefore, the rubbing sound, which is sometimes heard in this disease, is superseded by the sound of dullness. In other cases, where the dullness is not very extensive, or the liquid effusion not very considerable, the friction may continue although dullness be present in some points, more especially about the central portions of the chest; for, as we shall by and by see, the liquid sometimes raises up the lung, where this organ itself is free. The liquid effusion I have mentioned, subdues the low crepitation in some measure; even from its very commencement, there is a greater amount of dullness in the lower than in the middle and upper parts of the chest. But it has been pointed out by Dr. Walsh and others, that at its commencement, the liquid effusion is not confined to the lower parts; that it does not fall to the bottom immediately upon its secretion, but that a thin layer remains at the upper part, between the lung and the chest. This effusion has a tendency to compress the lung. There is a natural tendency of the lung to contract by its own elasticity;—if the chest be opened at any time, the lung collapses by its own elasticity, and by its own weight, but it cannot do so when the air is unable to enter the chest; but here effusion takes place in the chest, and the same principle that causes the lung to collapse when the air is let in, causes it to collapse when there is fluid in the chest. This is the true explanation of the thing, first distinctly pointed out by M. Willan, and since described by Dr. Carswell of Liverpool. It is in very slight degree, but, however, it is just enough to cause that diminution of the sound on percussion, which we do actually perceive in the upper as well as the lower part of the chest, in the early stage of pleurisy. But I still maintain it is greater in the lower than in the upper part, even at the time the liquid effusions are speading themselves about. These matters are very important to know. There is a thin layer spread over the surface of the lung, so superficial that it does not prevent you from hearing the sound on percussion, but it is somewhat deadened. You find the distinction obtained by slight percussion, more completely than when strong percussion is used, for then the stroke passes beyond the superficial layer, and, therefore, the filliping percussion answers best; but, in many instances, the broad stroke of the hand does it. On the other hand, if you strike hard, you will often find yourself puzzled to know whether the sound is duller or not. These are signs of great importance, because they announce the disease in its earliest stage, at a period when a knowledge of its presence is of consequence, inasmuch as it guides us at once to the application of the most effectual remedies. Very early in the disease, it will be found that there is a very great difference between the sounds in the upper and the lower parts of the chest; and as the disease advances, and the effusion increases, this difference is increased, depending not only on the gravitation of the fluid in the lower parts of the chest, but also on the compression of the lungs against the upper part of the thoracic parietes, thus modifying the character of the sound there; so that you have not only the lung compressed and occupying a smaller space by the increase of the fluid, and rendering the sound duller in the lower part, but in consequence of its pressing forwards at the upper part of the chest, a tubular note or sound is given on percussion in this part. Not only is the vesicular structure brought into closer contact with the chest, but you have the tubes brought into closer contact also; the sound becomes clearer and more natural; which is due to the increased quantity of air in the tubes more than the vesicular structure, and, therefore, giving it a tubular sound. In some instances, particularly in children, this is developed in a very remarkable degree, so much so that the sound is extremely like the note obtained by percussing on the trachea. This exists in adults sometimes, particularly where there are adhesions. As the disease advances, this may become more or less masked, in consequence of the effect of the increasing effusion, and, as is sometimes the case, from its pushing away the lung altogether.

The next class of signs connected with effusion, is the modification of the voice-sound which is heard. The effect of the pressure of the liquid, in this case, is principally exercised on the vesicular structure. There is still the tubular structure, which being more elastic, more resisting, is not compressed in the same degree; it is chiefly the vesicular structure that is compressed by the liquid, and consequently it gives less sound, being a bad conductor. The sound is transmitted, but

it has to pass through a layer of liquid, and, as might be expected, it is in some degree modified in character; so that, instead of bronchophony, you will have some modification of it—some change in the sound created by its passing through the layer of liquid, that alteration presenting the phenomenon called ægophony. This sound is more vibratory in character—more reedy, as musicians call it. There is a vibrating note given—a quivering in the note of the voice transmitted through the liquid, unlike what is ever transmitted through the tubes unaffected with liquid. This is called ægophony, or the breathing voice of the goat. It is heard best when the quantity of the liquid effusion is not considerable; when the quantity is more considerable it is modified in another way, as the liquid effusion increases, pressing away the contents of the lung further and further:—thus the tubes are compressed also, and where they are so compressed, they do not appear to be capable of receiving the whole voice, but transmit the respiratory tones only. The higher tones are sometimes affected, so as to produce a sort of silvery toned voice. The voice is heard at a great distance, like the voice of the ventriloquist. This is quite a distinctive mark of the pressure of liquid effusion; it thus resembles the metallic tinkling. The situation of the sound is usually in the middle region of the chest, and may be said to be between the third and the sixth or seventh rib, and in the back; it is frequently heard along the lower angle of the scapula.

We now come to the next sign. After the ægophony, there is a blowing kind of tubular respiration, produced obviously by the same cause. Here the tubes are brought into closer contact with the walls of the chest; the vesicular structure cuts off the conducting power, and the situations where the sound is heard are not always the situations where the ægophonic sound is so well given; they are nearer the root of the lungs, and in these cases, the tubular respiration is often heard, and in some instances it is remarkable to what amount this is produced, more particularly where there is considerable liquid effusion.

There is another thing to remark in these cases; sometimes, where great compression exists on the surface of the lung, the sound assumes somewhat of a musical character—actually taking a musical note. Some French writers have pronounced this entirely inexplicable, because they have not taken the trouble to study and examine these things. The phenomenon may be simply explained thus: here the air is passing over the mouth of the tube in the compressed lung, and you find a sound clearly produced, for there is no disturbing current of air passing in and out to prevent its vibration. Now this blowing sound of respiration is produced in exactly the same cases. Those who attempt the study of auscultation without understanding the principles of acoustics, will be always getting into difficulties. I find this is very necessary; every practitioner ought to know these principles thoroughly, but more especially those who attempt to teach others should at least be acquainted with the principles themselves, so far as to perceive the common modes in which sound may be produced.

We have next to deal with another phenomenon. We have frequently, together with ægophony, a cessation of the pectoral fremitus on the affected side. This occurs when the quantity of liquid effusion is pretty considerable. I believe even a small amount of liquid effusion diminishes pectoral fremitus; but in these cases it often happens, that where the lung is floated up against the chest by the increasing effusion, it is sometimes brought into close contact with the thoracic walls; sometimes this is owing to adhesions, sometimes not, and as a consequence of this, there will be this great variety in the resonance and vibration of the voice. Where the liquid effusion is more considerable and there is no adhesion, there will be a total absence of the vibratory fremitus in this region, while it may be perceived on the corresponding part of the chest. When the liquid effusion takes place to a great degree, this vibration is damped,—the ægophonic sound is not found to produce that vibration, and though you do have ægophony distinct enough in its true character, you do not perceive the vibratory motion of which I have spoken. Ægophony rarely produces this effect, unless there is some bronchophony with it. This is an important distinction, because this cutting off of the voice does not exist as an effect of consolidation. Where there is consolidation, without liquid, in the chest, there is an increase of the pectoral fremitus over its middle region. I shall have to speak of that another time, with a view of controverting some doubts that have been thrown over this subject. Now, where adhesions are present, you will find that this rule with regard to the voice does not exist; the voice is transmitted through the liquid in an increased degree, and after a while, in the advancing state of the disease, there is not only a cessation of the pectoral fremitus, but of ægophony also. When the lung is compressed, as it is in extreme cases, against the mediastinum, there is no respiratory sound at all in the lower parts of the chest, therefore the sounds that do exist are proof of the increasing effusion and dullness on percussion; but this dullness is not confined to the lower or to the middle parts of the chest, but is over the whole region, accompanied with a considerable quantity of the tubular sound. The different signs are much later in this part of the chest than in any other disease. Where you find consolidation of the lung, there is a deadness of the stroke, a feeling of resistance given to the stroke, something like the sounds you experience in rocking a barrel full of water; this extends to about the fourth rib; below this the sound is obviously owing to the stroke reaching across to the healthy lung, and in some parts, likewise, being mixed with the tubular sound. With all these things, there is a cessation of the respiratory movement on the affected side; as the liquid increases, the respiratory movement diminishes greatly, and most so at those parts of the chest where the liquid accumulates in the greatest degree; and you find, connected with these symptoms, that the lung becomes gradually pushed up further and further away from the walls of the chest, causing the motion to diminish in an equal proportion: the motion disappearing, that part in which it ceases becomes gradually devoid of sound. In all these cases, we must judge of these phenomena by comparison of the affected with the healthy side. With regard to the sound and motions of respiration, the contrast is very striking between the two sides, not only by reason that the motions and the sounds are diminished on the diseased side, but also because they are in the same proportion increased and exaggerated on the healthy side; there is a supplementary motion of the healthy side, to make up for the want of motion on the diseased side, and it may be said that the respiratory forces become entirely directed to that part of the chest which is under their influence. This is not only an effort of nature to supply that which is wanting, but it is in some degree the natural consequence of the impenetrability of the lung on the diseased side, for although the action of the muscles is exercised chiefly on the side of the chest to which they belong, yet this action sometimes extends towards the other side also. This may be said with regard to the diaphragm; the action of respiration takes place, and affects not one side only, but both sides simultaneously, and therefore, when the diaphragm cannot make its descent fully on one side, it still continues to do so on the other side, and by that descent tends to increase the action of the healthy side. This causes what is called puerile respiration, owing to the mechanism being exaggerated in connection with that side. I state this, because the respiration is by no means so energetic as would account for the increase of sound, and the increase of movement on the healthy side. The motions on the healthy side are then exaggerated, and so are the sounds, and you have all over that side an uniform development of the respiratory action. These symptoms will increase, and be more and more marked as the disease goes on. They are generally more marked when the disease takes place rapidly, but where the system becomes gradually accustomed to the change, these effects are rendered less apparent.

Now we come to another sign arising from the increased effusion, and that is, enlargement of the affected side. This enlargement of the affected side is a sign of the increasing effusion, and the effusion becoming very considerable; but there is a slight change of form often perceptible very early in acute pleurisy—at a very early period, indeed: it is not at all uncommon in children, particularly in those whose chests are very mobile. With this great enlargement of the affected side, we find a dullness on percussion over more than half of the chest, while the upper portion sounds tolerably well. It is not uncommon to find the shape of the side altered, without any alteration in size; but this cannot be brought to rule and measure The increase of size becomes apparent, however, as the quantity of effusion becomes more considerable, so as to push away the lung altogether. The pressure is exercised not only in forcing up the lung, but also in expanding outwards the walls of the chest; this may be sometimes seen by the eye, but it is more accurately ascertained by measurement round the body, by means of a tape carried from the centre of the ensiform cartilage, or the bone of the sternum, round to the spine, and then comparing the two sides together. It is found in these cases, that the diseased side has increased to the amount of half an inch, or even two, three, or four inches, more than the other. This increase of size often takes place very rapidly, and diminishes after a few days, and this without any diminution of the liquid effusion. The cause of this we shall see presently. With this increase of size, there are signs of displacement, the intercostal spaces becoming bulged out by the pressure of the liquid. The natural depressions seen in the act of respiration, now become less apparent, and there is a general roundness given by the dilatation of the chest. The pressure is exercised on all sides, and the mediastinum is pushed in. How are we to know that in the living body, but by the sound on percussion? This was accurately pointed out by Dr. Stokes. The mesial line divides the cavity behind the sternum into two halves; the right half corresponding with the right lung, and the left half with the left lung: but if the mediastinum is pushed aside by the liquid effusion, the whole sternum is rendered dull on percussion. This is important, because not only is there a change in the contents of the pleura, but an actual enlargement by the increase of the contents. The mediastinum cannot be pushed aside without displacing the heart, and the heart becomes in some cases pushed further to the left; now, in proportion as this takes place, it will be revealed by especial signs. We find the heart beating more and, more to the left, and instead of being heard, as it naturally is, in front of the left nipple, it is heard lower down, and towards the axilla: this causes increased dullness on percussion. Then, look again at that portion of the chest below. By-and-bye, the space between the scapula and the clavicle is filled up, and there is dullness there from the same cause.

We now come to the consideration of the inferior wall of the chest, or, in other words, the diaphragm; this becomes pushed downwards towards the liver, and, consequently, instead of being concave it now becomes convex towards the abdomen, and as a natural consequence, presses the liver downwards towards the umbilicus, producing a characteristic sound of dullness at this point, which you may ascertain by percussion; you may also feel the liver resisting the hand, and forming a sort of tumour. I have known many instances in which this tumour has been considered to be the chief disease, and the patient has been treated as for an affection of the liver. These mistakes are very common, and will continue so, until auscultation is more generally practised. Now, the same thing occurring on the left side, the intercostal spaces, and the mediastinum are affected in the same way, and the diaphragm is pushed downwards also, more rapidly, however, because the liver at this point is less resisting. The heart is the principal organ of the chest that is materially displaced; and it is curious enough that it is displaced to such a degree, that sometimes it is pushed altogether, when there is extensive liquid effusion, over to the right side, where it is found

beating between the fifth and sixth ribs. This is accompanied, in some instances, with but little disturbance, and, in many cases, the patient knows nothing at all about it; but this change is very important, and forms a diagnosis of a very conclusive character. I said just now, that the enlargement of the side is, sometimes, greater at first, and that it subsequently diminishes without a corresponding diminution of the effusion. This point has not been previously stated that I know of; but I have made the observation many times. The diminution of the effusion seldom takes place at once, it requires a little time; and until it takes place, there is a greater pressure on the external walls. Now, as to the effects that are produced by this liquid effusion: it might be expected that such a state of things was not compatible with life; still I have met with cases, in which there has been a great amount of liquid effusion, and yet the patient has been scarcely aware of any disease of the chest; the breathing has been a little quickened, but there has been no pain; and, perhaps, the patient may have complained more of weakness than anything else. The extraordinary displacement of the organs, which I have spoken of, takes place only when the effusion occurs gradually: where it occurs more suddenly, there is, as I said, always dyspnœa; and this is owing to the fact, that when it takes place suddenly, there is not time for the displacement of the organs, or the shifting and adaptation of the different organs of the chest, to the new state of circumstances. The first pressure exercised by a great amount of effusion, is usually felt on the walls of the chest, or on the mediastinum, and at this period, the oppression is greatest; but as soon as the other organs begin to yield, some relief is given to the dyspnœa. In all the cases which I have seen, there has been a considerable amount of diminution in the dyspnœa before the diminution of the effusion takes place; and it is more especially the weaker parts that seem to accommodate themselves to this new state of things.

There are some varieties and modifications in the signs of this disease, produced by adhesions, and which may be very shortly stated. Whenever the lungs are adherent by previous disease, it is quite clear that they cannot be pushed aside: liquid effusion will not do it; the effusion may displace the lung more and more at a point above or below, but there will always be a part attached to that spot, where the adhesion is formed; and this modifies the sound. In the first place, you may have bronchophony at the commencement of the disease, particularly at the upper part of the chest; bronchial respiration goes on, though the liquid effusion increases. These adhesions restrain the expansion of the chest; its distention does not take place with the same degree of freedom. So also in the case of adhesion to the diaphragm; the attachment of the lung to the diaphragm, prevents the displacement of the latter; it prevents it being pushed down. This occurs not unfrequently; and it appears curious that this may prevent the bulging of the chest in its lower part. When the adhesion takes place in the upper part of the chest, the lung is pushed against the side, and then you have the tubular sound, in a great degree, in the earlier stage, and you may have this remaining even to the very last.

OBSERVATIONS ON THE MEMOIR OF MM. DUMAS, BOUSSINGAULT, AND PAYEN, ENTITLED "INVESTIGATIONS CONCERNING THE FATTENING OF CATTLE AND THE FORMATION OF MILK."

Letter from Professor Liebig; with the Discussion on the Subject at the Academy of Sciences.

In the *Compte Rendu* of the sitting of the Academy of Sciences of February 13, 1843, I find that MM. Dumas, Boussingault and Payen have been led to adopt the following opinion concerning the origin of fat in the body of herbivorous animals, and of milk in the body of the cow. To avoid erroneous interpretation, I extract, *verbatim*, from their memoir, the passage which relates to it.

"According to this opinion, the fatty matters are formed principally in the leaves of plants, and they often affect in them the form and properties of waxy matters. In passing into the bodies of herbivora, these matters, forced to undergo in their bodies the influence of oxygen, experience in them the oxidation, from which the stearic or oleic acid formed in fat results.

Although this system is very simple, it is difficult not to put on a parallel with it, an opinion naturally based on investigations undertaken by M. Dumas, and which he has already communicated to the Academy. Indeed, sugar may be considered as formed of carbonic acid gas, water, and olefiant gas. Now, there is nothing to prevent olefiant gas, on being separated, from assuming various states of condensation, and from fixing water in such a manner as to give rise to ordinary alcohol, to potato oil, to ethalic school, and to margaric alcohol, &c."

The following is a sketch of the investigations of M. Dumas concerning the formation of fatty matters, which I quote from the *Annales de Chimie et de Physique*, 3e Serie, t. IV. p. 208.

"Liebig is of opinion that the herbivora form fat with sugar or starch, whilst MM. Dumas and Boussingault establish it as a general law, that animals, of whatever kind, do not form fat or any other organic elementary matter, and that they derive all their aliments, whether saccharine, amylaceous, fatty or nitrogenous, from the vegetable kingdom.

"If Liebig's assertion were correct, the general formula given by MM. Dumas and Boussingault, as resulting from the chemical statics of the two kingdoms, would be false."

From the above, there can be no doubt concerning the opinion of MM. Dumas, Boussingault, and Payen, relative to the formation of fat in animals. It is the waxy matters, produced in the organisms of plants, which are changed, in the animal body, into stearic, oleic, or margaric acid.

Although the conversion of wax into fatty acids has never hitherto been observed, and although it is very difficult to conceive how a substance, which is not saponifiable, and whose melting point is much higher than the temperature of the animal, can pass into its blood in order there to undergo oxygenation, and conversion into stearic acid, this opinion, expressed by such illustrious chemists, whose talents are so generally recognised, would appear extremely probable to every one; I should have been tempted to have admitted it myself; but before declaring myself, I was fortunately led to examine the excrements of a cow, which had for a long time been fed with hay and potatoes, and I found, to my great astonishment, that these excrements contained very nearly all the fatty or waxy matter contained in the aliments. The cow, which daily consumes 15 kilogrammes of potatoes, and 7½ kilogrammes of hay, receives 126 grammes of matters soluble in ether; that makes in 6 days 756 grammes. The excrements furnish, in 6 days, 747 gr. 56.

But, according to the beautiful experiments of M. Boussingault, (*Annales de Chimie et de Physique*, t. LXXI., p. 75,) which are perfectly in accordance with the daily results of our rural establishments, a cow, fed with potatoes and hay, in the indicated proportion, furnishes in 6 days 64 kilogrammes 92. of milk, containing 3,116 grammes of butter (according to M. Boussingault's analysis).

It is, therefore, absolutely impossible that the 3,116 grammes of butter in the milk of the cow can proceed from the 756 grammes of waxy matter contained in the aliments, since the excrements of the cow contain a quantity of matter soluble in ether, equal to that which has been consumed.

After this letter had been read, M. Magendie rose and said: "I am a member with our honorable brethren, MM. Boussingault and Payen, of a Commission, appointed by the Minister of War, which, for nearly a year, has been occupied with experiments concerning the feeding of the horses of the army. This Commission, which is on the point of terminating its labours, has already collected a great number of very interesting facts. We have occupied ourselves accessorily, with the question of the fat contained in the provender, admitting with chemists, that dry hay, for example, contains nearly 2 per cent. of a matter soluble in ether. We have taken account, in our experiments, of the liquid and solid dejections. In horses exclusively fed with hay, the dry matter of the latter contains 6½ per cent. of fat. If it is not all the matter called fatty, of the provender, which I would not affirm, the proportion of this matter in it is at least tripled. Consequently, this result greatly resembles, as regards horses, that which Liebig has just announced with relation to cows."

M. Payen replied, that if the experiments made by the Commission of the *Amirant*, (the Commission appointed by the Minister of War) had presented results contrary to those obtained in the work executed in common by MM. Dumas, Boussingault, and himself, he would have been the first to perceive it, and would have hastened to inform his colleagues of it; but he could not see the slightest discordance between all these results.

M. Magendie has, doubtless, kept in mind only the fatty substances contained in the dried excrements, without taking account of the proportions of water, and of the total weight of the excrements in the normal state; nor, consequently of the weight of the food which has disappeared by digestion: by regarding all these considerations, in order to establish exact comparisons, it will be seen that the rejected fatty matter, instead of being equal to the quantity contained in the aliments, and particularly in the hay mentioned, which contains much more than 2 per cent. of fatty matter, is below that quantity.

Finally, so far from having fattened by feeding with hay alone, the horses rather lost in weight.

On this occasion, M. Payen added that in order to reply at once to Professor Liebig's letter, and to an article on the same subject, which he had just received, he would shew that the interpretation given by Liebig, of the very different results obtained by several chemists, in the analysis of maize, cannot be sustained. Liebig said, speaking of geese which were fattened by maize, it is evident that fat does not occur quite formed in their food, for maize does not contain a 1000th part of fat or of similar matters.

To that we replied that maize contains from 7 to 9 per cent. of fixed oil, which is easily extracted, and that the presence of this oil is sufficient to explain its fattening power.

Liebig now replied that M. Lespes, in an old analysis of maize, found no oil, any more than M. Gorham; that M. Bizio found 1.5 per cent. in the grain; that he himself, in an analysis recently performed, in order to control ours, found only 4.25 per cent. of oil in maize collected in his own garden, and altered by fermentation; that, without disputing our results, he thinks he has a right to say that, since maize has sometimes 4.25, and sometimes 9 per cent., it remains demonstrated that every one may draw, from the results furnished by the employment of maize in fattening, the consequence which best agrees with his individual opinion.

We reply in our turn, that there is not and that there never has been, maize without oil; that oil forms an indispensable part of all the cotyledons of *Graminaceæ*; that it amounts to 60 or 66 per cent, of their weight, in all the cases examined; that the cotyledon of maize, which is very bulky in proportion to the seed, contains this oil like all the others, and that the size of the cotyledon explains its preponderance in the grain of maize; that, besides, near the surface of a grain of maize, under the epidermis, cellules filled with an oily secretion are always found.

We should have thought it perfectly needless to explain to Professor Liebig, that if M. Lespes did not find oil in maize, it was because he did not look for it; that if M. Bizio extracted only 1.7 per cent. of it, it was because he employed insufficient means of extraction; and that if Professor Liebig obtained only 4.25 from rancid maize gathered in his own garden, it is perhaps because it was rancid,

We, who have simply taken the maize of commerce, arising from extensive culture, such as is employed as food, have found in it from 7 to 9 per cent. of oil. It is easy for us to produce such at pleasure, and we should be very desirous of seeing some maize without oil; for we cannot

easily conceive its existence; and we strongly suspect that such maize would not have the same fattening power as the other, which we should be truly curious to verify by experiments.

We therefore persist in believing, that the starch of maize contributes little to the production of fat livers (*fois gras*); and that it is the oil of maize which performs the essential part in this phenomenon, the same as fat acts a similar part in the experiments of M. Magendie, in which the fat liver was developed in dogs, under the influence of a diet consisting, exclusively, of fatty matters.

M. Boussingault said that being detained in Alsatia, it was impossible for him to participate in the investigations undertaken at the instance of the Minister of War, concerning the feeding of the horses of the troops; that nevertheless, having had means of making, in the country, experiments which respond to the wishes expressed by the Minister; he thought it his duty to devote his attention to the alimentation of horses. His observations related to 30 horses; they were continued during a year; and he would shortly have the honour of presenting them to the Academy; but in the meanwhile, he thought it right to declare that these results are entirely different from those just announced by M. Magendie.

M. Magendie said in reply to M. Payen, that so far from having neglected the water of the dejections, and the portion of hay digested, he founded his remarks on these two facts,—by comparing the hay deprived of water, consumed in 15 days, with the sum of the solid dejections also deprived of water. By supposing 2 per cent. of fat in dry hay, we have 14 kilogrammes; by supposing 6½ per cent. in the dry matter of the dejections, we have 19 kilogrammes 5. The horses should therefore have rendered more fat than existed in the hay, without speaking of that escaped by the other excretions. These results were obtained by M Poinsot, a young chemist, of much promise, in M. Payen's laboratory; it appears to me that they are worthy of a place in a special memoir on Fattening, if it were only to be refuted, if it were thought that good reasons for doing so existed.

I know that at the present time, and by new processes, it is no longer 2 per cent. of fatty matter that is found in hay, but 3 and even 4 per cent.; our experiments are, then, inaccurate, and must be recommenced. It must, however, be ascertained, whether, by applying to the dry matter of the dejections, the analytical processes which have shown that hay contains twice as much fat as was supposed, the same result will not be arrived at with regard to the dry dejections. Then my observations would subsist in all their rigor.

It is very fortunate for physiology, that such skilful chemists as MM. Liebig, Dumas, Boussingault, and Payen, devote themselves to investigations of this nature; great benefit must result to this science from them; but it must not be desired to go too far. It is doubtless important to know, that vegetables contain matters analogous to, nay, even resembling, the organic elements of animals; but in demonstrating from this, that it is these vegetable matters which exclusively form the tissues of animals, there is a great distance, which can be surmounted only by numerous and direct experiments. I do not doubt that the learned chemists whom I have just named, may execute them with success; but they do not at present exist, and consequently, the question of the nutrition of animals still remains, as it has done for a long time, one of the most obscure points of the science. Let up hope that the labors of our honorable brethren will speedily elucidate it.

M. Dumas did not intend at present to defend the opinions of general physiology, which M. Magendie had just attacked. With relation to the question raised by Professor Liebig, he would call to mind that two opinions had been given concerning the origin of fat in animals. The first, by Huber, who attributes the origin of the wax of bees to the sugar which serves them as food; the second, by MM. Tiedemann and Gmelin, who suppose that the fatty matters pre-exist in the aliments of animals.

Liebig regards the opinion of Huber as the most probable. We, on the contrary, consider that that of Tiedemann and Gmelin is more in accordance with facts.

Moreover, we have been directed on our part, as Liebig has on his, by certain results of experiments, and by certain theoretical views. We have just viewed the state of the question concerning the fattening by maize; let us now consider its position relative to the employment of provender.

We have announced that provender, the husks of cereals, bran, and even straw, which were regarded as unimportant food for fattening, contain considerable portions of fatty matter. We have extracted 2 per cent. from hay, sometimes 3, and even 5 per cent. The other products, such as the husks of oats, recoupette,* have furnished from 5 to 6 per cent. We, therefore, found in provender sufficient fatty matters to explain the formation of that of butter and that of fat. Professor Liebig, on his part, expresses himself, at the same time, in the following manner:—

"Whatever may be the idea formed concerning the fatty matters in the organism, it is certain that neither the grass nor the roots eaten by cows contain butter; that the provender given to cattle does not contain beef-fat; that the parings of potatoes, with which pigs are fed, and the seeds eaten by poultry, do not contain the fat of the goose or the capon."

As soon as he was acquainted with our analysis of provender, Professor Liebig hastened to repeat them, and in this case, as in that of maize, he has recognised their accuracy; he was, therefore, mistaken in denying the existence of fatty matters in the aliments of the herbivora.

But he now starts other objections to the opinion which he combats. It is no longer a question of the total absence of fatty matters in these aliments, but of the proportions and properties of these matters.

Now, he finds, like us, that the fatty matter of the provender resembles wax, but does not comprehend how it could be converted into fat or butter. Professor Liebig, who, like us, seeks the truth, will permit us to observe that he, who very well understands that fibrin, albumen, starch, sugar, and gum are converted into butter or fat in the herbivora, comprehends, still better, how sugar is converted into wax in the bee. Now, since sugar would give, according to him, sometimes butter, sometimes fat, and sometimes wax, why should it be so unreasonable to suppose that wax, by an almost isomeric metamorphosis, might be converted into fatty acids?

But let us not now go further. Liebig says, that the provender and other aliments of the herbivora, are void of fatty matter; we say, and we prove, that some of them contain much. With regard to their nature and properties it requires time to make a complete study of them. We have not neglected it, as will very soon be seen.

Liebig reproaches us with not having taken account of the fatty matter of the excrement. We did so, and we have expressly said so in our Memoir. Only, our experiments differ a little from his, in the manner in which they are conducted.—M. Dumas added, that it appeared to him, from glancing over Liebig's letter, that he had not made the experiment on the alimentation of the cow, which is related in it; that from several experiments, real and good in themselves, he had compounded a fictitious experiment, in which he had combined the most heterogeneous elements. The following, in fact, is a verification of the manner in which he proceeded:—

According to M. Boussingault, a cow, at Bechelbronn, ate 15 kilogrammes of potatoes, and 7kil·5 of hay; it yielded, in six days, 65·92 litres of milk, containing about 3kil·116 of butter. According to him, again. a second cow ate 15 kilogrammes of potatoes and 7kil·5 of aftergrass; she furnished 24·7 litres of milk only in three days; each day she produced 4 kilogrammes of excrements. These two determinations, made at different periods, may be found it two distinct Memoirs.

Now, Professor Liebig takes the aliments of the first cow, and calculates their contents in fat, according to that of the hay of Giessen, which is the poorest in fatty matter that we are acquainted with. He takes the excrements of the second cow, and calculates their contents in fat, according to the cow-dung richest in fat which has been analysed at Giessen.

Finally, he includes in his calculations, the milk and the butter of the first cow, which are at their maximum.

It is thus that he arrives at this conclusion, that a cow, truly imaginary, which would have eaten, at Bechelbronn, hay of Giessen; which, eating as the first, would have furnished the excrements of the second and the milk of the first; which, eating the hay of Alsatia, would have produced in weight, the excrements furnished by the aftergrass of Alsatia, and in nature, those which the hay of Giessen would give; that such a cow, in fact, would give in its excrements, all the fatty matter of its aliments.

The butter of its milk must then have another origin. We will not dispute this conclusion; it relates to animals too chimerical for us to have any thing to do with them. We may here confine ourselves to saying, that the whole of Liebig's pretended experiment may be reduced to the following hypothesis: if it be supposed that a cow, which has eaten hay very poor in fatty matter, has given much milk, very rich in butter, producing much excrement very rich in fatty matter, will it not become very probable that the fat of the aliments did not produce the butter? Who does not perceive how easy it would be to upset the argument.

But these are fallacies in opinion, by which Professor Liebig does not wish to profit any more than we should do.

The truth is, that the quantities of milk may vary from simple to double, between one cow and another; that the proportion of butter may change in them from 2·2 to 4·8 per cent.; that the weight of the dry excrements may vary from 3 to 4 kilogram, per day; that the contents in fatty matter, aftergrass and dung, also singulary vary.

We do not hesitate to affirm, that if the cow which furnished the dung analysed by Liebig, gave 4 kilogrammes of dry excrement per day; that if it furnished 65 litres of milk in six days, giving 3,116 of butter,—it was because she ate hay much more rich in fatty matter than he was aware of. It is for Professor Liebig to inform the public how much reality there is in the experiment which he relates, and to divest it of all those fictions which he has mixed up with it, doubtless without perceiving the inconvenience to the interest of truth which results from it.

For our part, we have studied the question, and we have taken care to render our results perfectly comparable and homogeneous.

Professor Liebig will find in our Memoir, a series of experiments, made expressly on a milch cow, commencing from January 1, 1843, but operating on a single cow, by feeding it with analysed aliments, by analysing its milk, and by weighing and analysing its excrements. He will then see to how much care, and to what precautions a truly serious discussion of such facts is subjected, and how very inadmissable is the idea of applying to an animal, relations of this kind, observed on another.

In the meantime, since Professor Liebig now admits that the aliments of the herbivora contain fatty matters which he did not suspect to exist in them, he will learn with interest that we have really committed an error, and that if certain hays gave us only 2 per cent. of fatty matter by ether, others can furnish 4 or 5 per cent. of it, especially when treated by processes more conformable to digestion. It will be easy for him to ascertain this, by submitting hay, and especially aftergrass, to the action of an acid before treating them by ether.

To conclude, we maintain that the provenders furnish quantities of fatty matter, which explains the effects of fattening and of lactation; that, ready to renounce this opinion, if necessary, we regard, at present, the view of MM. Tiedemann and Gmelin, who suppose the fatty matters to be all formed in the aliments, as best agreeing with known facts, and as being able to suffice for their explanation.

That, at all events, we think we ought to expect that Liebig has proved that an imperfect combus-

* The article technically called "middlings."

tion may convert, in the blood, fibrin, albumen, sugar, and gum, into fatty matters, before admitting these transformations which, thus operated, appear to us always to admit as little agreement with the facts of physiology as those of animal chemistry. —*Chemist for July.*

NEW RESEARCHES ON CLAIRVOYANCE.

[The following interesting narrative is extracted from a recent book on the subject by Edwin Lee, Esq.,—a gentleman favorably known through Europe by his numerous medical publications.]

According to an appointment, I went on the 16th inst., accompanied by Dr. Davison, to No. 21, in the Rue Neuve Coquenard, where about thirty persons of the upper and middle classes, among whom were three or four physicians, were assembled. The first somnambulist presented to the meeting, a young woman named Julie, was the person mentioned in the Paris Globe about a fortnight ago, as having, at an evening assembly, described, among other things, to the astonishment of all present, a dissecting-room, with a subject upon the table, where the physician, *en rapport* with her, had that day been; and on being further questioned as to what peculiarity existed in the foot of the same gentleman, she mentioned that two of his toes had been adherent together from his birth, which was also true; the extract from the above paper having been published in the Morning Herald on the 3rd instant, the day on which I left London. I shall not, however, dwell upon the trials made upon Julie, beyond stating that she told a gentleman with whom she was placed in relation in answer to his inquiries, that on his return home from a former *seance*, he had occupied himself in the evening in magnetising a person at a distance, whom she subsequently said was herself; that although it did not affect her at the time, she now, on being again somnambulised, felt conscious of the circumstance. This statement was acknowledged by the gentleman to be true. On my being placed in relation with her she said, before I spoke, that I came from a long way off; and on my producing a letter to ascertain whether she could read it, she said before it was opened, that it was not signed, which was the case. She was, however, wrong in saying that it came from a lady, though the writing being very small and fine would have been taken for that of a lady by most persons. After some efforts, and carrying the letter to her forehead, the writing being reversed, she pronounced the two first words, but could not make out my name, which followed, and complained that the writing was too small. As the eyes, though closed, were not covered with a bandage, I expressed my dissatisfaction to the magnetiser at the result thus far. At a later period Dr. Davison drew from his pocket a number of the Gazette des Hopitaux, of which I placed the title in contact with her occiput, and asked her to read the line. She complained of being fatigued by the previous questions of several of the company, but said she would try; and after requesting me to think of the words, said the first letter was a G. She could not, however, distinguish the other, and desired to be awakened. Now, as may be supposed, I had taken good care that she could not possibly have a glimpse of the paper, and if, for argument's sake, it be conceded that she had guessed the right letter, it must at least be allowed that the guess was a good one, when the chances were twenty-four to one against it. This result is, however, insignificant compared with those presented by the next subject, a young man about twenty years of age, of spare habit and intelligent countenance, named Alexis. This young man, on being magnetised, first presented the more ordinary phenomena of cataleptic rigidity, insensibility to pricking &c. The arm was held out, at the same time both legs were rigidly extended at a right angle from the body, which was propelled forward from the chair upon pressing forcibly upon them. A heavy chair was supported upon the legs for some time, the state of rigidity being continued altogether for about twenty minutes, at the expiration of which period the limbs were restored to their natural pliability by the magnetiser, who then announced that Alexis was in a state of lucid somnambulism, and observed that he presented the peculiarity of hearing what was said by other persons than the one *en rapport* with him. After some of the visitors had questioned him, I placed myself in relation with him, and while holding his hand, gave him a card of Dr. Davison's, asking him to read it, the printed part being reversed and in contact with his hand; he carried it to his nose and forehead, and after some efforts mentioned the three first letters. I then desired that his eyes should be bandaged, and the magnetiser took from a drawer a piece of thick woolly padding, such as is used by tailors for the padding of coats, about ten inches long and six broad, and offered it to any of the company to apply. I availed myself of the opportunity, and placed it over his closed eyes in such a manner that the lower edge came down nearly to the aperture of the nostrils; over this a folded handkerchief was tied firmly round the head, and it was then proposed that he should play *ecarté* with any of the company; a gentleman accordingly offered himself, and two packs of cards (one with red, the other with green backs,) were produced, and were used alternately every game. The somnambulist had, meanwhile, still continued his efforts to read Dr. Davison's card, which he at last accomplished, calling it, however, Davignon. While playing, he named the cards which he cut or played, followed the suit with correctness, and repeatedly mentioned the cards which his adversary held in his hand, saying at the beginning that he had won or lost, as the case might be, and was only mistaken two or three times. During one of the games a gentleman present who had not witnessed anything of the kind before, substituted his card for that of Dr. Davison's, which lay upon the table. The somnambulist was soon aware of the exchange, and after touching the gentleman's hand, mentioned the first letter of the new one, though the name was in contact with the table, and was consequently unknown to the company. After requesting the owner of the card, (Le Cte. de Balincourt,) to think of his name, he said he would tell a letter after each deal. On pronouncing the two last letters of the second word, and winning at the same time a game, he said, *cela fait le compte*, thus punning upon the word; and at last succeeded in mentioning the the name except the *de*, which he omitted. Another visiting card was likewise presented to him, which he read more quickly, as his lucidity appeared to increase. A lady then took the gentleman's place as his adversary, and the results were repeated during several games to the satisfaction and astonishment of all present. On one occasion, after he had proposed, the lady dealt him four fresh cards, and while they lay with their faces upon the table, he said, without touching them, "It is of no use playing; I have lost; they are only spades and diamonds." I turned the cards up, and there were in fact two spades and two diamonds. During an intermission in the playing, I drew a card from the pack without looking at it myself, and asking him to name it; he said, "It is a king;" but when I had ascertained that he was mistaken, he said, "No, it is a ten," which was true: I asked him which ten; he said, a black ten, and first mentioned the ten of clubs, whereas it was spades. I then folded down the number of the Gazette des Hopitaux, and asked him to read a line in moderately large type. He first placed the paper upon his epigastrium, then to his forehead, and holding my hand, said the first letter was an L requesting me at the same time, to think well of the words, which I did, and he pronounced them, *Lit de Nicole*, this being the heading of an advertisement. All the time of the card-playing, the magnetiser was at a distance, and only approached when called upon by the somnambulist to support him according as he felt himself tried. These trials continued more than half-an-hour, when complaining of the heat, he tore off the bandage.

After he had reposed a little while near an open window, attempts were made to test his capabilities of describing the residences or friends of the persons who placed themselves *en rapport* with him; and although he made several mistakes, and often corrected himself, his descriptions were acknowledged by the parties to be generally true, especially his account of the appearance and disposition of the father of one of the ladies, who was at Abbeville, and also that of the apartment of M. C., a physician, who placed himself *en rapport*; in whose antechamber he preceived, among other things, a skeleton, and stated its place with reference to other objects. He likewise described the sitting-room, as well as a picture suspended in it, in which last attempt, however, he had considerable difficulty, though he at last succeeded, placing himself in the attitude of the persons represented, which was that of an eminent physician, whose name, he said, he saw beneath, though he could not read it. A name was admitted to be beneath the picture, but it was that of the painter. He could not for a long time state what was in the hand, and first said it was something round, a skull: after several efforts, he exclaimed, "Ah! he has something in both hands, and that is what confuses me; something round in the left hand, and something long in the right." It was than stated by the gentleman that the portrait was depicted holding a heart in his left hand, and demonstrating it with an instrument in his right.

Although there was no reason to doubt the good faith of this gentleman any more than that of others of the company, who had put questions to him, and had been satisfied with the exactness of his answers, I had not come merely to see what should be done by others, and accordingly placed myself again in relation with him, upon which he complained, as he had likewise done while his eyes were bandaged, of being annoyed by the white and blue stones on my breast, meaning the pins in my cravat, which were pearls set in blue enamel. I asked him to describe my apartment, which, after having been told the street, he proceeded to do, saying at first it was upon the third floor. I requested him to tell me the number, upon which he counted slowly up to seven, at which he stopped, and then said, "How stupid I am! it is not so much, it is No. 1, which was perfectly correct, this apartment being on the ground-floor, to which I had only moved a few days before from No. 7, on the third floor. He then described the apartment with tolerable accuracy, making, however, two or three mistakes, such as saying at first that the bed was on the right on entering, and the windows on the left, though he speedily corrected himself, and reversed their position, which was the right one. He likewise stated the position of the *secretaire*, but said it was open, which was not the case. He mentioned, however most of the peculiarities without being questioned. For instance, he said there were two rooms; that the smaller was reached by passing through the larger one; that there was a very small passage before entering the larger room from the court; that this room contained the bed, and two windows, though when asked, he did not state correctly the position of the fireplace, with respect to the windows. He said the smaller room had but one window, that he saw in it a toilette table, and a large black trunk, which was also true; (the trunk having been left there by the former occupant of the apartment,) and that there was a sort of passage between the two rooms. While describing, he told me two or three times to think well of the apartment, as he had done with respect to the line which I had previously asked him to read. He, moreover, said that I had left something on the night-table close to the bed, and on my stating that I was not aware of having done so, repeated with decision that he saw something, he thought it was some paper. As I could not fail to be struck with his accuracy in other points of the description, I was curious on arriving at home to see whether there was in fact anything upon the night-table, to which my first look was directed on entering, and on the marble slab which forms its top, there lay a large piece of the end of the white bed-curtain, which usually hangs by its side, and which I had never before observed to be there.

While describing, he was very positive upon some points, sometimes contradicting the person when told he was wrong; upon some other points he was not equally positive, and corrected himself. For example, having mentioned that there was a well to the right of the house of a gentleman *en rapport* with him, he was contradicted, but per-

sisted in his assertion, upon which the gentleman's wife said the somnambulist was correct, that the well was to the right on coming from the house; on the husband making some reply, the slight altercation was terminated by the somnambulist saying that the well lay north of the house, in which both husband and wife agreed.

The card playing was carried on throughout with a quickness which could not have been exceeded by an expert player, and though he now and then made a slight mistake, such as taking one court card for another, he did not once revoke, but led off the proper cards, followed his adversaries' suit with precision, and generally after the first or second card had been played, he told whether he had gained or lost the other tricks, mentioning the cards in his adversary's hand, and once, when some of the red cards got mixed with the green ones, he sorted them out without any hesitation.

Two days afterwards I again saw him, at first alone with the magnetiser, who proposed to magnetise him in order to make some further trials on his clairvoyance and intuition. He at first objected, stating that he did not then feel well-disposed, but yielded to the request. After I had applied the cotton and bandage to the eyes, I drew a paper from my pocket, on which were some printed characters in moderately large type. He made out in a little while the larger word *magnetisme*, but had more difficulty in decyphering the rest, which however he at length accomplished, "*Traitement des Maladies par le Magnetisme*," being the words. I then opened a book, and gave him the heading of a chapter to read, three other people having meanwhile come in. He made out the words, *Des Lotteries Allemandes*, sooner than he had done the previous ones. The magnetiser then proposed that he should describe some distant locality of which I should think. I mentioned my apartments in London, of which the somnambulist proceeded to attempt the description, and was correct in some points, such as that the house was in a street which opened into a very wide street or road, that they were on the ground-floor, the staircase being continued beyond, that the entrance to the sitting-room was to the left of the passage, and at the further end of the room; that there were two windows, and the fire-place was to the right on entering, that there was only one window in the bed-room; in the more minute details, however, he was frequently at fault. I next asked him about Wiesbaden, where I have passed the last five summers. He said on arriving into the town, the passage was along a handsome street, that the hotel at which I descended, was on the left of the street and in a square: on my inquiry as to whether it was large or small, he said very large; the Hotel des Quatre Saisons being in fact in the situation he described, forming a corner of the Wilhelm Strasse and one side of the square, and is, with one or two exceptions, the largest hotel with which I am acquainted. I told him that I did not remain more than a day or two in the hotel but took apartments, which he said, with truth, were in a lodging-house in the principal street; that there were houses only on one side of the street, that they were not high; that the look out was upon some large trees and the promenade; which any one who has been there would acknowledge to be a correct description. He further said that the promenade turned off at an angle, and that on each side of the other part he saw a raised terrace; doubtless in allusion to the colonnades, to which the ascent is by four or five steps. He said, however, that there was a monument or statue in the square, which was incorrect, and made a mistake in two or three other particulars. A physician then came in, who spoke of the state of cataleptic rigidity, as being probably voluntary, and put himself in the same position as the somnambulist had been; upon which the magnetiser asked him if he would try to maintain that position as long as Alexis, and support a heavy weight upon his feet; the physician replied that he might be able to do it after several trials. This appeared to annoy the somnambulist, who desired to be awakened. I then took a card, and asked him to say what it was; he at first refused with some petulance, then said it was a club, and on the magnetiser placing himself in relation with him and magnetising, he named the nine of hearts, the card being the nine of diamonds. The magnetiser said this was frequently the case, the presence of persons who were adverse to magnetism, or who tried to discredit or ridicule it, having often the effect of preventing the phenomena of lucid somnambulism from being well manifested.

At the third *seance*, on the 19th, there was again a tolerably large assemblage of persons, and among them a gentleman who produced a sealed letter, the contents of which he was pretty confident the somnambulist would not be able to make out. I had the day before mentioned to Dr. M'Carthy who had not previously seen any similar experiments, that they were to be repeated; he accordingly came at the beginning, and Dr. Davison afterwards came in: there were likewise two or three French physicians. After the exhibition of rigidity and insensibility to pricking the rigid limbs, I again applied the padding over the eyes, while Dr. M'Carthy tied the bandage; on some one's inquiring if it could not slip, the somnambulist appeared annoyed, and asked for a second handkerchief, which I placed below the other, so as to leave only the end of the nose free, and below this the padding protruded on each side lower than the nostrils. Dr. M'Carthy expressed himself satisfied that he could not see anything, and the ecarté playing was again proposed; a gentleman producing a pack of cards which he had brought with him, enclosed in the government envelope. As the pack was entire, the low cards had to be taken out, which the magnetiser asked the somnambulist to do; he said, however, that his lucidity was not yet sufficient, and declined. On cutting for the first deal, he at once said to his adversary, without turning the cards towards himself, "It is your deal," and, as on the former occasion, selected his cards, playing to his adversary's suit, and leading off with precision, naming the cards in his adversary's hand, and consequently telling whether he had lost or won: now and then, however, mistaking a knave or a queen for a king, and once or twice at the beginning, throwing out a low trump, after having proposed. During one deal, at the expressed wish of the magnetiser, he played to his adversary's suit, and led off correctly while the cards still lay on the table, without taking them into his hand. I then produced my passport, doubling it down opposite the heading, and asked him to read the first words; he first spelt the word *nom*, and then began afresh, mentioning each letter of the words, *Au nom du roi*, till the last, which he pronounced without spelling. I then took a card, but he said he would have no more cards, and tore off the bandage. Dr. M'Carthy then took a paper from his pocket, and asked him to read a line, he took it for a moment, placed it to his epigastrium, and then threw it aside, declining to attempt, saying, it was the title of a paper; but as his eyes were not bound, even if he had read correctly, the circumstance would not have added to his reputation for lucidity, after what he had exhibited while the eyes where blindfolded; I then placed myself *en rapport* with him, and asked him again the number of my apartment, which he repeated was No. 1. But, I said, there are two numbers one; what is there to distinguish mine from the other, what is there on the key? he replied, there is a letter hanging to the key. What letter? He first pronounced A; passing quickly over it, but hesitated a little at B, then said C, and with decision, "It is a C;" which was true. The gentleman had previously given him his sealed letter, which he undertook to decypher, and after some trials, said it is writing, which was denied: though it appeared on opening the letter that the letters and figures, were in writing. He then said there is a picture and some figures; on being asked how many figures, he said five. He was then asked the letters; of which there were several small ones, not forming words, and four capitals. He named three of the capitals, which on opening the paper were found to be correct, as also a small coloured picture, which had been enveloped in the paper containing the letters and figures. He was then awakened, and a female was somnambulised, who exhibited different expressions and attitudes, according to the will of the magnetiser, remaining with rigid limbs, and with the same expression of countenance, till it was altered by the magnetiser's passes. On this, however, there was nothing but what has been often seen; and it is true, as some present asserted, that these attitudes, &c., might possibly have been assumed voluntarily. Such, however, was not my impression in this instance, but the test of this would be the length of time for which the positions could be sustained, which by any one who was deceiving could not be for more than a few minutes. M. Ricard, had now arrived with his somnambulist Virginie, who had repeatedly given proofs of great lucidity in describing localities, and whose descriptions were acknowledged to be exact by Mr. Macpherson Adams in the trials which he and his friends made upon her, and of which he forwarded an account to the Medical Times last October and November. After being magnetised by M. Ricard, Virginie was placed *en rapport* with an ecclesiastic of the seminary of Toulouse, two others being present, and proceeded to describe the town, his church, and residence. She was right in some particulars, such as the street leading to the Place du Capitole, the colour of the houses which are of brick, there being no steeple to the church, &c., but was at fault in several others. She was subsequently placed in relation with an old gentleman, who wished her to describe his chateau. After two or three generalities, which she answered correctly, she attempted to enter more into particulars, and said truly that on ascending two steps, a large room was on the right, which he said was the billiard-room; she also said there were four windows in it, correctly described the colour of the walls, around which were pictures, but could not make out some piece of furniture, which was between the rooms, though she appeared to try hard. She likewise said she could not perceive any billiard-table; though as the gentleman had mentioned it was the billiard-room, if there were any deception, one would suppose the billiard-table would have been one of the first things mentioned. She was, however, unsuccessful in some of her other attempts to describe the same place, so that her exhibition on this occasion may be considered a failure, as compared with some of her previous ones.

Causes of Chorea.—Dr. Todd, in the course of a clinical lecture on chorea, observes that it does not occur in the florid and robust, but in the pale, feeble, and irritable; it is not found in those who live well, enjoy good food, and good clothing, and breathe a wholesome and invigorating atmosphere, but in those who either have not these good things within their reach, or who, from debility or previous disease, are prevented from enjoying them, and the predisposing causes, to which practical writers agree in assigning its production, are all pre-eminently calculated to favor derangement of nutrition. Among these Dr. Copland places hereditary predisposition, bad or deficient nourishment in early infancy, particularly an insufficient supply from the mother's or nurse's breast, or total deprivation of this nutriment; effeminate education and premature exercise of the mental powers; debility of the digestive and assimilative viscera, a neglected state of the bowels; confinement or sedentary occupations in low, unhealthy, or crowded places; low or innutritious diet, especially vegetable food, impure miasmal air; want of personal cleanliness; and the scrophulous and rheumatic diathesis. The frequent occurrence of chorea in the rheumatic state of constitution, which is so prejudicial to the process of hæmatosis or the formation of healthy blood, is highly favorable to the view of its connexion with impaired nutrition. The state of the blood then must be regarded as contributing to produce what is called the predisposition to chorea. Some of the normal elements of this fluid, the colouring matter in particular, are deficient, —or possibly, as in the rheumatic constitution,

some preternatural element may be present to contaminate or vitiate it. The nutrition of the nervous system suffers with those of the other textures, and consequently when any portion of it is unduly excited, a morbid action of that portion is apt to continue.

TO CORRESPONDENTS.

Westminster Hospital.—*We have received several letters on this institution: if publication could do anything in making the Hospital a distantly decent establishment, we should gladly insert them—but we fear the case is hopeless. Intrigue, jobbing, and nepotism form its year's history: if it were at once made over by deed, as the personal property of half-a-dozen persons we could name, it would be managed much as it now is. They are even to be thanked for the lack of ingenuity they shew in not further abusing their influence.*

P. D.—*We cannot insert the letter, Such statements must come authorised.*

An Enquirer *has read the article cursorily, when he enquires why the names of those attending the Council meeting of the British Association were not published. Dr. Webster's name* was *given, and in capitals. That gentleman forms the most convenient and economical of Councils. A penny-post letter to himself, and the formalities are over.*

A Friend at Guy's *is thanked for the hint.*

M. A.—*It is not our custom to name books as received: the arrear of reviews will not, therefore, now be discharged. Every dog has its day, and so will every book.*

T. B. C.—A Constant Reader, Bath—A Newton-Man—A Looker-on—Potus et Impransus—*and several other correspondents, declined.*

The communications of Dr. M., Mr.H.D., Amator Justitiæ, *under consideration.*

X. Y.—*Apply at once to the Poor Law Commissioners. They will not suffer the Guardians to perpetrate such injustice.*

THE MEDICAL TIMES.

SATURDAY, JULY 22, 1843.

Non fumum ex fulgore, sed ex fumo dare lucem
Cogitat, ut speciosa dehinc miracula promat.

WHAT Mesmerism is—what its nature, limits, or tendencies—we dare not essay to define. Its friends tell us that it is an agency wondrous as new—one of the greatest as latest of the achievements of science—a new and promising opening into the most exalted yet obscure departments of human knowledge—a new joy for the woe-stricken—a new hope for the despairing; in one word, a vast miracle, and source of miracles, in relation both to our physical and mental being. Its enemies, on the other hand—if the most unscientific of medical journals be looked down upon as their organ—while recognizing in Mesmerism a novel cause evoking artificially, and at will, some of the most remarkable and recondite of human phenomena, such as somnambulism, double consciousness, and trance—can yet see in it only a piece of vile imposture, or, to use their own congenial language, a description of "humbug and quackery" which merit for its supporters "the hootings" of their professional brethren. But whichever are right, as to its claims on our *respect*, there is no disputing longer the force of its demands on our *attention*. Mesmerism, whatever it is, is now the study and absorbing interest of the whole people, and however unwilling we may be to join in the investigation, or reciprocate the general feeling, the very nature of our calling invincibly connects us with the subject—impressing us into the service, if we will not enter as volunteers, and establishing us—will we, nill we—as authorities *for* science, or *against* ourselves, as time shall prove us right or wrong. In this state of things, then, we shall probably be pardoned by even the least credulous of our readers, if, yielding to the requests of numerous of our valued correspondents, we rightly place our notions before them as to the phase of mind and spirit, in which men should come to the private consideration, or public dealing, with this much-contested subject.

Now, we will say frankly that, forgetting the spread of popular credence, and solely considering the amount of testimony that exists for most of the pretensions of Mesmerism — reflecting that many of the vouchers for even its greatest marvels have reputations to lose as men of purest science, of soundest sense, of nicest honour —we *are* not, and, as philosophers, and searchers after the true, *cannot* be justified in treating it with *unenquiring* incredulity. The time is past, and for ever, when the believer in any dogma, much less one which is thought to be founded on actual experiments, will renounce it on the derisive laugh, or the unexamining denial, of any man. Your *ipse dixit* authorities were never held in less awe, or more suspicion, than in the present day. If the enthusiastic assertor of improved propositions receive a sigh from our pity, the unreasoning and bigotted opposer of the probable or the proved, extorts a smile from our contempt. Incredulity is not necessarily wisdom. Like every other state of the mind, its worth depends on its justness in relation to the circumstances on which it is exercised. It is as likely to be in error as its extreme: with some it is more likely. The man who, like most of our profession, has read the history of popular delusions—like him who, in experience, has felt the insecurity of reliance on his fellows' virtue—feels an overbearing tendency to contrary courses. Perhaps, indeed, the most credulous of credulities is that of incredulity, the most superstitious of superstitions that of unbelief. The man who pushes incredulity to its utmost limit, and calls himself atheist, will believe that while nothing can exist in nature save through laws, those laws—the insensate and unreasoning creators of the sensible and reasonable—can exist without causes. A Volney or Voltaire, who treats the bible as a fable, will go to the Chinese for history, and believe in satyrs while ridiculing an angel. It would seem as though a fixed quantity of credence were every man's portion, and that, if shut out from its proper channels, it formed for itself others. It will out somewhere. The less it is allowed to exhibit itself in its ordinary phases, and through its natural passages, the more umid and unsightly an excrescence it forms in its concentration. Indeed, an acute friend of ours, who never allows the simplest assertion to pass him without objection, has admitted to us that the more incongruous a proposition, the more inclined he is to give it credit for truth. True wisdom, then, is to be credulous, or incredulous, in the right place. There is, from the past's exuberance of credence, a semblance of sagacity in incredulity; but when unsustained by reason, it is like the ape's resemblance to man—something more deforming than if it wanted likeness. It is the imbecility of folly under the gorgeous robes of wisdom—death in lusty youth's last fashion.

A circumstance which should especially warn us against a blind abandonment to incredulity on such a subject as Mesmerism, is that each profession or calling is singularly opposed to innovations in its own bosom, however great the improvement they bring with them. Religion, in its various changes from worse to better, owes little to the sacerdotal order. Socrates' life was not prolonged by any amity of priests, and the Jewish Sanhedrim unwittingly established the Christian religion in its founder's death. The law, again, has not owed its increased humanity, or enlightenment to its Eldons: and history tells us that Buonaparte's tactics made old Austrian generals protest against his victories as won against every principle of belligerent science. Nations, again, like professors, seem to shew least credence to their own denizens. Galileo had more fame probably in London than in Rome; Harvey in Rome than in London; Newton in Paris than in Oxford. The same principle is at work with regard to both; our own interests, our own personal circumstances interpose, as the change or its cause is nearer to us. If distance do not lend enchantment to the view, it gives, at least, clearness to the vision, or removes obstacles from its range.

As medical men, our scepticism towards the new and the marvellous is greater, perhaps, than that of any other class. Our education has made so many wonders to the multitude plain things to us, that the inexplicable, whether new or old, becomes suspicious. There is no process in nature, however extraordinary, which is not satisfactorily accounted for to us by our professors. Nothing exists for which we have not a definite law and a definite action—and if we cannot explain terms by things, we can always explain, or try to explain, things by terms—a marvellously agreeable mode of hiding from ourselves and others our ignorance. We are, too, a body forced into an acquaintance with not the brightest side of humanity, and are taught distrust by experience. All of us have heard, most had personal experience, of ingenious frauds. To be the dupe of imposture is an imputation on our professional skill; and the precocious sharpness and invulnerability to deception, which we took credit for during the last months of our first session, are not allowed to forsake us when we can exercise them, with such increase to our credit, in a commencing or established practice.

With this strong predisposition to incredulity, it is not wonderful that many of us make our readily formed judgments the arbiters of what is probable or possible, without any great care as to the asserted facts—or nice abstract reasonings as to the soundness of our premises. It is new, it is extraordinary, it is unknown, or dissimilar, to *our* experience: *ergo*, it is false. Now what makes this procedure the more captivating is, that nine times out of ten—aye, ninety-nine times in the hundred—it will be correct. We know that nine-tenths of the patents which cost so much money to secure are left unworked; and of the schemers who surround and tease us with improvements how few, very few, shew they are not wasteful enthusiasts. But there is an exception; the one hundredth may be more than a dream. How many pitied and scorned the man who resolved to float through the clouds in that frail handiwork of his—the balloon! How many laughed at him who launched the first steam-boat on the American waters! How many smiled at the idea of nature, through the agency of light, flinging off the most astounding likenesses in seconds! How few disbelieved Humphrey Davy when he, who thought the discovery of the philosophers' stone not impossible, proved that gas, instead of peacefully lighting London, must destroy it by combustion! or Lardner, when he shewed the impossibility of doing that which afterwards so availed him—crossing the Atlantic in a steamer! or that careful inventor who secured a patent to prevent the friction which would otherwise make rail-road travelling impossible!

Beyond the plainly incongruous, and what is evidently self-contradictory, we know not what is impossible. We know little or nothing of nature or her powers; and if Newton could speak of his knowledge but as mere grains of sand, or empty cockle shells picked up on the great shore of the Universe, less minds may well speak with diffidence as to their powers,—and hesitate to make them the authoritative exponents of both *what is and what may be*.

We cannot, of course, anticipate the effect of these observations on our readers; but if they weigh with them as with us, they will induce on Mesmerism a state of mind which neither believing nor disbelieving without knowledge, remains in suspended doubt, till experience in its increased growth, changes incertitude into the conviction either of confirmed repudiation or assent. While carefully guarding our minds against a faith which precedes, much less opposes, evidence, we should remember that in questions of even scientific fact, we owe deference to other proofs besides the ocular. There are inferences to be derived from the law of moral improbabilities, which deserve as much our respect, if not our assent, as the strongest evidence of the senses: and when such large classes of people, including the suspicious, the discerning, and the disinterested, give implicit credence to scientific doctrines whose very marvellousness predisposes every mind to reject them, the man who would avoid the bigotry of science, and the dogmatism of knowledge, is compelled to reflect and forced to investigate. He feels that if on one side his faith has the physical phenomena of Mesmerism to contend with, it has, on the other, to combat with a moral wonder equally marvellous—the credence of so many pains-taking and intelligent supporters.

To our medical brethren we say, then, on Mesmerism, as on every novelty in science, let us doubt till we know—let us nurse suspense of judgment till enquiry remove it. The philosopher, faithful to science, like the true believer in religion, "tries all things, and holds fast by that which is true." It is only by acting thus that medical men can be worthy of their profession, or maintain its respect in the eyes of discerning and unprejudiced society,—or that any generation of us can pass into the tomb without being eternally stained like those who, preceding us, witnessed and opposed the innovations of a Harvey, a Jenner, a Hunter, and so many other "marvel mongers."

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 7th July. 1843.

Among the new and extraordinary inventions for which our age is so renowned, we must not neglect to notice that with which M. Matthias Mayor has just gratified the medical public.

This ingenious author proposes employing in surgical operations, instead of the knife, an instrument which he thus describes,—"*One of the blades of the tachytome, or sacateur universel must be concave, and of sufficient depth to contain half the circumference of the limb or part to be removed, the other to be convex, so that*," adds he, "*we shall have a sabre on one side, and a yatagan on the other.*"

If it was his intention to prove, that a part of the human body can be amputated by his enormous scissors, M. Mayor teaches us nothing new, for Dr. Guillotin solved this problem long ago. The author has not yet employed his instrument on the living subject, and it appears doubtful that it will ever come into general use: we must wait until it has been allowed a fair trial, to conclude as to its efficacy or utility.

Hahnemann, author of the homœopathic system, has just died in the *Rue de Milan*, where he was residing. This eminent physician was born in 1755, at Messien, a small town of Saxony, and received the first rudiments of his education at the college established there. After studying medicine two years at the University of Leipsic, he went, in 1777, to Vienna, where he was patronized by Dr. Quarin, and appointed librarian to the governor of Transylvania. In 1780, he was received doctor of the University of Erlangen, and after residing in several places, he finally settled, in 1789, at Leipsic, where he lived by his literary productions. It was there that he was led, while translating "Cullen's Materia Medica," to the discovery of his system, which, notwithstanding its errors and absurdities, has been useful in drawing the attention of the profession to the study of materia medica, which was considered of but little moment from the time that Broussais' doctrine came into vogue.

In medicine, as in everything else, we see that contrasts exist. We have been just speaking of a system in which the doses are infinitely small; now, there is residing in this city a distinguished physician who administers enormous doses of the sulphate of quinine in acute rheumatism, and especially in arthrodynia. The author of the memoir, (M. Monneret) from the observation of 22 cases, has come to the following conclusions:—1st, that the sulphate of quinine produces a notable diminution of the rheumatic pains, not as an antiphlogistic, but in causing a species of intoxication of the nervous system, which masks for the moment the inflammatory symptoms. 2d, That if it be continued to be administered for some time, it irritates the stomach and intestines, and finally gives rise to symptoms of a typhoid character.

M. Colombat del' Isére, who has devoted upwards of fifteen years to the study of diseases of the voice, and who has recorded several extraordinary cases of psellismus balbutiens, read at the weekly sitting of the Academy of Medicine, a paper on this subject. The different varieties of this infirmity may, according to this practitioner, be comprised under the following heads:—1st, convulsive psellismus (begaiement choreique); 2d, tetanic psellismus (begaiement tetanique.) To effect a cure, he first endeavours to overcome the difficulty the patients experience to utter certain syllables, by means of the different positions he gives to the lips and tongue. This accomplished, he makes the patient repeat, in set time, the said syllables, by means of an instrument of his own invention, and which he has called *muthotome*. At first, he makes the pendulum of the instrument oscillate 50 or 60 times in a minute, and he increases gradually the number of the oscillations to 100. The relapses in the beginning were *one* in every *three* cases, then *one* in *six*, but for the last three years, they have been only *one* in thirteen or fourteen. On an average, the treatment lasts from a month to six weeks. M. Colombat then presented a patient about to begin his treatment, in order that the progress he might make, may be remarked.

The same day, M. Lahorie read a memoir on partial amputation of the foot. After describing the different methods proposed, he concludes, that the tarso-metatarsal operation ought to be preferred. In Chopart's method, the extensor muscles having no antagonists, by their contractions, may not only cause pain in the cicatrix, but even tear the wound open, and oblige the patient to undergo a second operation in order to obtain relief. In proof of this opinion he cited several cases, one especially, operated on by Prof. Velpeau: some time after, the patient suffered so much that this eminent professor was obliged to divide the tendo Achilles,—the relief was but temporary; for the second time, M. Robert performed it at St. Louis', but with no better success. The last-named surgeon, having divided the tendon for the third time, prevented its uniting too soon, by destroying every morning the cicatrix: after some time, he allowed the wound to heal, and since then the cure has been permanent. It is necessary to add, that the foot was kept in its natural position by an appropriate bandage.

An interesting paper was read by M. Tanchon to the Academy of Sciences, on cancer. From 1830 to 1840, the number of cases observed in the department of the Seine was 9118, of which there were 6955 women, and only 2163 men. The increase has been gradual; in 1830, there were only 668 cases, and in 1840, 889. In females, the maximum was from 50 to 60 years old—in males, from 60 to

70. The disorder offered 2.54,0.0 deaths in Paris, and only 1.63,0.0, in the departments, the number being for the former, 7999 cases, and the latter 1119.

July 12th, 1843.

A cause highly interesting to the medical profession is, at the present moment, about to be solved. Dr. Mallet, physician at *La Rochelle*, called in to attend a female in labour—was told her name afterwards, upon his promise to keep it secret. In the absence of the father, the accoucheur is obliged to declare the birth (Art. 56, du Code Civil); accordingly, he presented the child before the necessary authorities, but on being asked the name of the mother, declined giving it, founding his right to act thus on the latitude allowed to medical men, &c, by the 378th Art. of the Penal Code. Prosecuted on this account, he was acquitted by the tribunal of *Rochelle*, and that of *Saintes*. Threatened with further prosecution, he addressed himself to the Association of Paris Physicians, requesting their aid, which was granted; accordingly, M. Amable Boulanger, counsel to the Association, published a memoir on the subject, to which the most distinguished barristers have acceded. The opinion therein expressed is, "that however much a physician may regret the cause which necessitated his ministry, he ought not to refuse it, nor ought he to mention the name of the mother confided to his care, the more so that his silence is in nowise prejudicial to the child, whereas the honor of a family may depend on it."

A case of colica pictonum has just occurred at the Hospital St. Louis, and is interesting from the fact, that the disorder, as in Exanthemata, remained for some time latent, and declared itself without the existence of the special cause—emanations of lead. The patient had been employed at a manufactory of Cerussa, left it in all appearance quite well, and engaged himself as journeyman to a joiner. To different questions, he replied, that for a fortnight he had enjoyed perfect health, after which, without any known cause, he was seized with the first symptoms of the disease, which lasted for a month before he resolved upon entering the hospital. The disorder soon yielded to the treatment employed by M. Martin Solon, which was composed of narcotics, (murias morphini,) with purgative injections, and sulphuric lemonade, as phthisanne.

This fact appears to support, in some measure, the opinion of M. Gendron, who, in a pamphlet published some time ago, asserts, that sulphuric lemonade is not only useful as a remedy, but likewise acts as a preservative. M. Grisolles, on the contrary, affirms, that it increases the disposition to contract the disease.

The Medical Gazette having published last week the number of cases of deformities treated by M. Jules Guerin, at the *Hospital des Enfans*, M. Maisonabe addressed a letter to the *Gaz. des Hopitaux*, in which he stated, that the number recorded is incorrect—that the clinical ward for deformities of the spine is useless, and that the patients have derived therefrom no benefit to their health. In reply to this communication, Mr. J. Guerin affirms, that the account is exact; that as to the utility of a clinical ward, Mr. Valentine Mott was so convinced of the benefit to be derived from a similar establishment, that he intended forming one at New York, in the American Orthopedic Institutiute, and that he is ready to allow his patients to be examined, and will be happy if the author of the letter will honour him with his presence.

10th July.

Academy of Sciences.—M. Moreau de Jounès communicated a paper on insanity in France.

After quoting the documents published in England and the United States, he adds, "both are erroneous, for it is improbable that so few insane persons exist in the former country, viz. only one per 13,000 inhabitants, and that the error probably arose from the documents including only the patients received in the public establishments; on the contrary, it is impossible that in the latter country there can be one insane person in 14! In France, the number, on an average of 8 years, is 18,350, or one in 1,900 or 2000: out of 5,400 to 5,800 patients, who entered yearly, that is, one per 6000 inhabitants, only 3000 left the hospitals; the deaths offered yearly a maximum of 1600, or from 9 to 10 per 100. Contrary to the opinion generally admitted, that insanity is chiefly owing to moral causes, such as love, grief, fanaticism, politics, &c., which act so powerfully upon the human mind, M. Moreau de Jounès affirms, that physical causes act far more so, such as drunkenness, satyriasis, wounds, deleterious gases, &c. In 10 cases, the latter causes produced the disorder 7 times, the former only 3. This fact is founded on the observation of 10,000 cases, during a lapse of seven years.

M. Valenciennes read a paper on tumours observed in the stomach of the horse, caused by the presence of entozoaria. These tumours, which are very common at this season of the year, were found to exist in the proportion of 11 to 21; the number varied from 1 to 4: were situated under the mucous membrane, to which they adhered very little; were divided into several cavities, which contained a species of mucus, and communicated with each other, and with the interior of the stomach, by means of four or five openings sufficiently large to permit the passage of the worm: a false membrane of a fibrous nature enveloped the tumour. The sexes were easily distinguished—the male offered at one end, which was straight, a mouth deprived of papillæ, the other extremity was of a spiral form: examined through the microscope,—the genital organs were visible—the penis was double, and the existence of wings was evident. The female, on the contrary, was straight, and had no wings. The author concludes, that it is of a different species from the worms already described, and ought to be classed between the ascarides and spiropteres.

11th July.

Academy of Medicine.—M. Voisin, physician attached to *Bicêtre Hospital*, read a paper on the Cure of Idiotism, by the application of actual cautery to the nape of the neck, and cited several interesting observations to prove the efficacy of this remedy. M. Deleau, jun., read one on foreign bodies in the middle ear. These substances are of various kinds:—1st, those introduced through the meatus auditorius after destroying the membrane of the tympanum: 2d, polypi; 3d, accumulations of cerumen; 4th, the fall of one of the small bones of the ear, or of a portion of the temporal—this last caused by caries; 5th, obstruction of its cavity by an accumulation of mucus (*engouement muqueux essentiel.*) The author recorded several observations on the different varieties, and pointed out the manner of treating them successfully.

M. Jules Guerin presented a patient affected with deviation of the spine, produced by muscular contraction, in order that the Academy might, after the cure, be enabled to judge of the efficacy of his method, which consists in dividing the muscles, the cause of the deviation. M. Bouvier asked to examine the patient in a horizontal position, and pointed out, that when thus placed, the deviation nearly disappeared; that the muscles of the right side contracted very little more than their opponents, and that this last phenomenon presented itself, if the position of the patient was such as to diminish the deviation of the dorsal vertebræ, and increase that of the lumbar, or *vice versa*.

GARLAND DE BEAUMONT, D. M. P.

KING'S COLLEGE HOSPITAL.

Clinical Observations on Lithectasy.—By W. FERGUSSON, ESQ., Professor of Surgery in King's College, and Surgeon to the Hospital. Delivered, July 13th.

The case to which Mr. Fergusson drew the attention of his pupils on this occasion was that of a man, named Alexander Brakefield, sixty four years of age, who was admitted into the hospital on the 17th of June. He was a native of Kent, and had always been employed in farming occupations; never very robust, and had suffered from pleurisies, slight fevers, and from the jaundice. For the last thirty-five years, he had had every spring and autumn an eruption on the skin, at which times he considered that his general health was better than at others. The first difficulty in passing water commenced about twelve years since, but he had not any well marked symptoms of stone for the succeeding seven years: he principally suffered during that time from pain in the loins. After this he passed a small stone, which he continued to do occasionally afterwards. His symptoms then became much aggravated, and presented all the usual indications of a calculus in the bladder. He also complained of tenderness over the pubes, and pain in the left side; the urine was pale, and slightly acid, sp. grav. 1.015. He was sounded, and a large calculus, with several smaller ones, supposed to be fragments, was discovered. On the 24th of June the report was that he had suffered less since he had been rested in the hospital than previously. The bowels having been cleared out by an enema administered at eleven this day, he was brought into the operating theatre at half-past one, and bound as for lithotomy, an ordinarily sized staff having been previously introduced. An incision was made about an inch and a half in length along the raphe, terminating just above the anus, whence diverged two sloping lateral incisions, each about three-fourths of an inch in length. The superficial parts having been divided, the urethra was opened a little in front of the triangular ligament, and the groove in the staff having been distinctly felt, the metal point of one of Arnott's dilators was passed towards the bladder. Fluid was then injected into the bag of the instrument, and dilatation practised, until the patient complained of pain. He was then removed to bed. He seemed to have suffered very little from the operation, and to have lost but little blood. An additional quantity of fluid was thrown into the dilator from time to time, gradually inducing pain. At four p. m. the urine was drawn off by means of the female catheter, a little of the fluid contained in the dilator having been previously evacuated. The instrument having been dilated to the utmost by five o'clock, was withdrawn, and a larger one was passed. At seven p. m. he complained of slight pain above the pubes, and also in the perinœum, in the course of the dilatation; the pulse was 96, full and strong: blood was still oozing from the perinœum. At ten p. m. a larger dilator was introduced; he felt refreshed, and had slept a little; the pulse was 82.

25th. At nine a.m.—He had slept at intervals

during the night; pulse 84; the urethra being now fully distended, it was resolved to attempt the extraction of the stone. The patient was placed on the edge of the bed, the fore finger passed in, and the stone felt; the fragments were easily removed by means of the scoop, after which a small pair of forceps were introduced, and the stone seized, but it could not be extracted, as it was too large. A larger pair were next tried, and afterwards the hook, but in vain; a strong pair having then been used, and the calculus seized, the blades were forcibly closed; the stone split into fragments, which were carefully extracted. The patient was fatigued by the operation, and lost more blood than by the previous cutting. The fragments of the stone weighed altogether two ounces.

Eight p. m.—Had slight shivering in the early part of the day, which was removed by wine, etc.; the pulse has varied from 88 to 124; complains of pain in the wound and in the abdomen near the pubes; suffers from thirst, and has vomited a greenish fluid; bowels open, the urine comes away freely through the wound—ordered diluents.

26th.—Had an opiate and diaphoretic last night; is troubled with bilious vomiting; the abdomen to be fomented. Ten p. m. tenderness of the abdomen removed; bowels open twice since the morning; pulse 88, respirations 18, easy.

27th.—Complains of pain at times in different parts of the abdomen; wound looks healthy; urine passes freely.

28th.—Not so well—complains more of the pain in the abdomen and wound; has fever, which continued during the day—vespere; pulse 120, weak, countenance anxious, abdomen tympanitic, wound sluggish. Was ordered wine and ammonia, with cardamoms and camphor every three hours. To have an opiate enema.

He gradually got weaker, and died the next day.

On examination of the body, thirty hours after death, a small quantity of a sero-purulent fluid was found in the cavity of the peritoneum, but no traces of active inflammation. The surface in the cul de sac between the bladder and the rectum appeared of a blue color, as if from commencing putrefaction, and the surface of the bowel presented a similar appearance. All the parts concerned in the operation were carefully removed from the body, and examined; they did not present any appearance of contusion or laceration; there was a slight ecchymosis on the right side of the prostate, but not on the left side. The adjoining cellular tissue was softened, and there was a slight sero-purulent effusion. The ureters were larger than usual; they were traced to their entry into the bladder, which appeared healthy externally, but thickened; the finger passed readily into that viscus through the opening in the urethra, which was made at the latter part of the bulb; the mucous membrane of the bladder was sacculated, some of the small cavities being filled with concretions; and the membrane itself was thinner than ordinary at these places. At the neck of the bladder, there were slight marks of contusion, covered with shreds of lymph. There were not any marks of injury between it and the pubes, a part where Mr. Fergusson is accustomed to look for them, after the operation of lithotomy.

The parts, which had been put up as a preparation, were exhibited by Mr. Fergusson, who laid open the urethra in its full extent, to see if the mucous membrane was intact. He found at the neck of the bladder something more than dilatation, an absolute laceration, the effect, as he thought, partly of the process of dilatation, and partly from the efforts at extraction. The prostate was seemingly injured chiefly at its upper and lower parts. The kidneys were of the natural size, pale and soft; the right pelvis contained from eighteen to twenty small concretions, about the size of a pea. The other viscera of the abdomen, generally, were healthy.

The operation that was performed in this instance, is that which in modern times has been called *lithectasy;* a proceeding to which attention has been called by Dr. Willis, in his excellent work on the treatment of stone. It is however one of older date. John Douglas in the year 1727 appears to have first suggested it, but the operation was not performed until nearly 100 years afterwards, in 1819, when it was done by Sir Astley Cooper, on a patient of Dr. Neil Arnott's. The case is described by his brother Mr. Arnott in a treatise published by him in 1821, to illustrate the use of his dilator. This operation was introduced as an improvement on that called by the name of the apparatus major, in which incisions were made, enabling the surgeon to reach the neck of the bladder, and to pass the instrument to force it open, to extract the stone. It was called the apparatus major, from the variety of instruments that were used. This operation was completed in a short space of time, but was nearly lost sight of, after the introduction of Frere Jacques' proceeding, and little was said of the slow dilatation of the neck of the bladder, performed by Sir A. Cooper, and advised by Dr. Willis, until recently. Sir A. Cooper's case and Dr. Willis's book even have not attracted much attention, yet the operation has been performed several times. In the autumn of last year, Mr. Elliot of Carlisle, performed it successfully on a boy, 17 years of age, and Dr. Wright of Malton, Yorkshire, also employed it successfully on an old man within the last few months Mr. Fergusson confessed that he had not considered that this operation presented any particular advantages over the lateral operation, which he had been in the habit of performing, but with the knowledge of these cases, and being well aware of the danger of lithotomy to the adult, he deemed it advisable to submit this patient to it, under the impression that his life would not be placed in greater jeopardy by it, and that his case afforded a good example for the trial of a proceeding, which promised so fairly for the extraction of the stone. The dilator of Dr. Arnott's, which was used, was described by him in his book; it consists of a hollow tube, one end of which is passed into the bladder, and which conveys away the urine, the tube being surrounded by a bag to which a smaller tube is attached, by which latter, air or any other fluid can be thrown in, so as to distend the sac. On this occasion, three different dilators were used, a small one at first to fit the size of the urethra, and to run along up the groove of the staff; this had not any central tube to carry off the urine, so that when it was requisite to do so, a female catheter was necessarily passed. When the urethra had been dilated to a considerable extent, a larger one was employed.

Notwithstanding Mr. Fergusson's reluctance to substitute this proceeding for lithotomy, he felt himself bound to do so, after the successful result in the other cases. Dr. Willis is very sanguine on the subject; he says "to me I confess that with this operation at command, stone in the bladder has already lost a great proportion of its terrors:—There is hardly a case to which it is not applicable, and its application is without danger immediate or prospective. The brief interval of from four and twenty to eight and forty hours, is all that is necessary to begin and end the operation;—and this with no doubtful prospect; it cannot end otherwise than well. Even if we found a stone of five or six ounces in weight, we should feel neither embarrassment nor alarm; we never should think of extracting such a mass entire, indeed, but we have an aperture of two, or if we choose, of three inches in diameter, and a canal of little or no greater length, through which we can introduce an Earle's or any other commodious instrument for breaking up large stones in the bladder, and reduce it to fragments in a twinkling. We might even have a professor of lithotrity in waiting, and give him an opportunity of proving the strength of his instruments, in circumstances where a break or a bend would prove of little consequence to the patient, and where no fragments,—not of the stone only, but of the instrument,—need be left behind to form the kernels of other calculi, or to task his ingenuity to invent additional implements for their extraction."

It is but proper, after such an account, that the supposed advantages of this operation over lithotomy should be known, and some of these seem so striking, as, reasoning without experience, to be well worthy of attention. With respect to the operation itself, there is less likelihood of a shock to the system then after lithotomy; when a patient is bound for the operation of lithotomy, the bladder cut open, and a stone extracted, perhaps with some degree of force, there is a great shock to the system, which in some constitutions may induce symptoms so alarming, as for the first twenty-four hours to render it doubtful whether the patient will recover from it. In this operation, the shock is but trifling. The danger of hæmorrhage also is avoided to a great extent. Dr. Willis advises to cut in the membranous portion of the urethra, but the older surgeons used to operate freely on the bulb of the urethra, and did not find it so dangerous, as it was supposed to be. There is of course a distinction to be made between a wound of the bulb and of its artery; the latter would be exceedingly difficult to get at, when wounded; the former is merely a spongy substance, hæmorrhage from which is easily controlled.

The cutting instrument not going deep in lithectasy, there is not any danger of wounding the artery of the bulb, the transverse, nor the pudic artery, nor the large veins at the neck of the bladder, from which dangerous hæmorrhage frequently arises, nor is there such danger of wounding important parts, as the rectum, nor, as in lithotomy, of the knife or gorget slipping between the rectum and urethra, or between the bladder and pubes. A free external wound is made, and there is less chance of infiltration and inflammation. All these statements are reason enough for preferring this operation, but they must be taken to a limited extent: some are of undoubted advantage, as regards the shock, bleeding, and infiltration. Mr. Fergusson, in experimenting with respect to lithotomy, has often tried how far the prostate was dilatable, and has always found that there has been laceration as well as dilatation, which, however, has not appeared to him to be so dangerous as the free incision made in the neck of the bladder, on the recommendation of some surgeons. In slow dilatation, the practitioner cannot reckon upon the mucous membrane remaining entire, unless a longer period be allowed for the process than twenty-four hours, otherwise, a tearing must take place,—thus constituting a wound, and it remains to be shewn whether it be a less dangerous one than a simple incision.

From these facts, Mr. Fergusson has come to the conclusion, that lithectasy is not attended with that immunity from danger inferred by Dr. Willis; but still, that it is not fair to hold this out as an instance in which the operation was performed in a perfect manner, and when done again, many improvements may be introduced, which may render it less dangerons, more especially as respects the removal of the stone, in effecting which, there was a force used nearly equal to that employed in lithotomy, more, in fact, than should have been for the due performance of lithectasy. Cases, however, will arise in future, in which an equal amount of force will be used to extract the stone entire, which a surgeon will always prefer doing, as when it is broken into fragments, the instrument must be repeatedly introduced for their removal,—thus increasing the danger, while some fragments may remain behind, and constitute the nuclei of fresh calculi. Still, the force employed was not so great as is often had recourse to by Mr. Fergusson in ordinary cases of lithotomy, and there was less contusion of the parts. Mr. Fergusson believes the process of extraction will always constitute the difficulty in the operation of lithectasy, because it is performed more under the arch of the pubes than in lithotomy, where the incision is made on one side of the anus, and the extracting force is applied from above downwards. He would be inclined to suggest, that in future the dilatation should be effected more slowly, from 36 to 48 hours being employed in the process, and if then the stone should be found to be too large to pass easily, the lithotrity instruments should be passed in through the incision in the perineum, as recommended by Dr. Willis, when the calculus might be broken into fragments, and then extracted.

Now comes the question, how to account for the probable cause of death in this case? It may be said to have been occasioned by a fever which occurred after the operation, similar to that which follows lithotomy; not so much following the operation though, as the subacute inflammation of the pelvis, caused by the processes of dilatation and extraction. One cannot imagine that such a proceeding can be adopted in an old man without inducing mischief; it may be said, in this case, that the constitution sunk under the inflammation excited in the pelvis. Mr. Fergusson mentioned the case of an old man as illustrative of this statement, in whom the femoral artery was carefully tied without any injury to the adjoining textures; nevertheless, subacute inflammation set in, and the patient sunk in four or five days—a result frequently seen in persons advanced in years, and following simple incisions, as well as operations of a more complicated character. It would be difficult, in this case, to declare the exact cause of death: we must be contented with the broad statement, that the man died from the effects of the operation; for had it not been performed, in all probability he would still have been living. There have been many cases of lithotomy in which the operation has been correctly performed, and yet the patient has sunk in a few days, although there be nothing wrong in the appearance of the pelvic contents.

Mr. Fergusson then directed the attention of the pupils to the character of the external incisions, in which he said there was a little novelty. One incision has been recommended along the raphe, but he was inclined to think that a single line would not permit the further steps of the operation to be performed with facility; he had, therefore, terminated the mesial one in two lateral incisions, extending just above and on either side of the anus. The consequence is that the parts are free, and no difficulty is afterwards experienced from the tightness of the skin, while at the same time the perineum is made shallower. A similar proceeding might be adopted with advantage in some instances of lithotomy. The danger in either operation does not depend on the freedom of the external incision.

This case proves that a stone may be extracted from the bladder without an incision having been previously made in the membranous part of the urethra, or in the neck of the bladder, a fact that had been previously demonstrated by Sir A. Cooper. It remains, however, to be proved whether this operation is likely to be more successful than lithotomy. It has been unfortunate in Mr. Fergusson's hands, but very many cases, even though they were successful, must be recorded, before a correct judgment can be formed.

REVIEW.

Some Account of the African Remittent Fever, which occurred on board H. M's. Steam Ship Wilberforce, in the river Niger, with an inquiry into the Causes of Disease in Tropical Climates. By Morris Pritchett, M.D., F.R.G.S., &c., &c. Churchill, 1843.

The predisposing cause of fever, that *vexata questio* of physicians, which has been by some writers considered to depend on the presence of marsh miasmata or malaria, by others on atmospheric causes, or on various local and accidental phenomena, such as volcanic eruptions and earthquakes, or on the unwonted presence of animalculæ, or the extrication of carbonic acid gas or carburetted hydrogen, or, as still more recently advanced by Professor Daniell, of King's College, at least as regards the African remittent fever, on the evolution of sulphuretted hydrogen from the waters of the rivers, is by our author referred to the phenomena produced by insolation and the exceeding humidity of the atmosphere. He is supported in his views by the experience of the principal naval surgeons, who have encountered this fearful pestilence. The invasion of the remittent fever in the recent African expedition cannot at all events be ascribed to marsh malaria, for it broke out after all apparent danger from that source had long since passed away, the regions of the mangrove and the swamp having been left far behind, and while the adventurers were lying off Iddah, whose sandstone cliffs, 60 or 70 feet high, ornamented with numerous habitations, erected on the plain which crowns them, interspersed with tropical vegetation—the palm, the silk, cotton, and the adansonia digitata, or huge Baobab, of which travellers have said so much—were felt as most agreeable to the eye, after the vast extent of low country, overflowed by the stream, which had been left behind. The weather at the time was fine—sunshine all the day, but with a cool air stirring, so that it was very pleasant under the awning.

"The high and rocky hills," says the Rev. Mr. Schon in his Journal, "both near and at a distance, put me in mind of the ruined castles of the Rhine, to which they bear a greater resemblance than anything else I have ever seen; the whole aspect uncommonly pleasing to the eye. I feel strongly impressed with the idea that the country we are now in must be the healthiest we have seen since entering the river. The banks above Beaufort Island are high and rocky, so that no malaria can rise from them; and if, as is said, the bed of the river here consists of sand instead of mud, nothing is to be apprehended from the receding of the water." On the 11th of September Mr. Schon has these words: "The country we are now in, the clear air and dry atmosphere we enjoy, would cause us to doubt that the climate could be dangerous, were it not for the sick and dying by whom we are surrounded. It is impossible to say to what the unhealthiness of the country must be ascribed; the appearance of it is very pleasant; the mornings delightfully cool; towards noon, however, it becomes hot, and continues so till after sunset."

It was, in fact, under circumstances so seemingly favourable that disease broke out, and soon laid prostrate many of the stoutest amongst us.

The Wilberforce arrived at Iddah towards the end of August, 1841, and by the 4th of September, a case of fever was put upon the sick list, on the next day another, and from that time they increased so rapidly, that on the 21st about thirty patients were in their hammocks, besides five who, with all the sick from the Albert, had been sent down the river to the sea in the Soudan a few days previously. On that day, the Wilberforce was also sent down the river, when "the master, purser, mate, clerks, engineers, stokers, marines, and seamen, with all the *savans* of the expedition, viz., the botanist, geologists, and zoologist, also two commissioners' clerks, being all severe sufferers, the ship may truly be said to have formed a floating hospital." Before Ascension was reached, every European in the vessel except five, had suffered from fever.

The weather during the whole of the month of August was cloudy, with more or less of rain every day, generally showers, between which the weather was fine. The average heat was 78 deg.; the maximum being 85 deg., and the minimum, 73 deg.

In September, the first few days were rainy, with thunder and lightning; between the storms the heat was very great. We had by this time reached Iddah, where the sickness began. The weather now became very fine and intensely hot till the 21st when we left the confluence, the heat in the shade on this day being 90 deg. at noon. As we approached the delta of the river on our way down, we experienced heavy showers, and the heat was much less oppressive. The average temperature of the month was 84 deg.; the maximum, 90 deg.; the minimum 72 deg.

The variations of the thermometer at Iddah were greater than along the coast,

the highest temperature being 85 deg., and the lowest 73 deg. The minimum was always observed about day-break, (from five to six in the morning;) he maximum occurred between two and three o'clock in the afternoon. Through the night, and in the evenings and mornings, the atmosphere was always very greatly charged with moisture, as was demonstrated by the wet and dry bulb thermometers, a degree and a half only of difference between the two being sometimes observed at these times. At the time sickness began to prevail, however, the weather had become intensely hot.

Every fact in the history of this ill-fated expedition tends to prove the overwhelming influence of the solar heat, combined with atmospheric humidity in the production of this epidemic. Indeed Dr. Pritchett observes, that "a hot season and excessive rains seem alone necessary to develope the disease."

The climate of the Western Coast of Africa differs from that of the West Indies, and most other hot countries, in its extreme humidity; the atmosphere is literally, for the major part nearly saturated with moisture, a fact which is shewn by the hygrometer; and which is speedily learnt from experience by all who visit the country in the rapid destruction of clothing, and the constant formation of mildew on almost every thing when laid by for a single day, in the course of which boots, shoes, woollens, &c. become covered with a complete white coating of this vegetable substance.

This excessively moist condition of the air is temporarily abated by the condensation of its vapour into rain, when the breathing becomes more

free, and a sense of renovation is experienced, that is quite refreshing.

The system, from exposure to a hot moist atmosphere for any length of time, may become to a certain extent predisposed to the advances of fever, or be rendered extremely liable to be acted on by any of the exciting causes of the disease, which appear to be various. That which was observed as pre-eminent in the present expedition, was solar influence; but the depressing passions, fatigue, bad or insufficient food, inadequate clothing, and drunkenness, are upon occasion effectual means of immediately inducing as well as predisposing to the disease.

Dr. Pritchett is of opinion that the excessive moisture of the atmosphere, without which the solar heat is unproductive of fever, acts by deranging the functions of the skin, lungs, and kidneys, and by conducting away the positive electricity of the body, and so producing exhaustion of the nervous system, in consequence of its incessant efforts to supply this vital stimulus.

An individual subjected under such circumstances to solar influence, almost certainly manifests that peculiar derangement of the system which is known under the name of fever, in the more severe cases of which there is an obvious tendency to decomposition among the constituent elements of the body, even before the extinction of life: the vital laws are here superseded,the ordinary physical laws come into play. If this goes beyond a certain very limited extent, life ceases, and the body is resolved into its constituent elements in new forms of combination.

In the Wilberforce, scarcely a case of fever occurred which could not be distinctly traced to this source,although it should be observed that a single exposure to solar influence was rarely sufficient to produce the disease; many persons exposed themselves repeatedly with impunity, and then laughed at all precaution as unnecessary, instancing the sunnings which they had received on various occasions without any injurious result. When I heard any one indulging in this strain, says Dr. Pritchett, "I was soon taught to expect him upon the sick list; and there indeed his name very certainly appeared before many days had passed, and too frequently before many more had flown, the disease with which he was assailed, had run its course, and he was numbered with the dead."

This epidemic was no respecter of persons, the young and the robust, and those who had in various instances before successfully braved the African coast, and other sickly climates, all seemed liable to its attack, and those who abstained totally from wine and spirits, as well as those who indulged to excess, were still more susceptible, than those who were in the habit of taking wine to moderation. The character of the attack is described by our author as follows: —

The symptoms of the febrile disease were irregular, and appeared to depend very greatly on the constitution of the individual attacked, and on the nature of the exposure to which he had been subjected. The disease frequently advanced at first very insidiously, the symptoms of derangement being greatly diminished, if not altogether absent, in the morning, but returning greatly increased in violence as evening advanced, so that many, who in the early part of the day made little or no complaint, were labouring under a considerable degree of febrile excitement before night; at its commencement, the disease sometimes partook of the intermittent type, it then gradually became remittent, and occasionally merged very nearly into the continued form; or otherwise, it was sometimes evidently remittent at its commencement, and changed into the intermittent type as it approached its termination, and the patient became convalescent. Many were merely indisposed for several days, before more decided indications of serious disease made their appearance. The usual complaint then made was of feelings of debility, and want of appetite, with derangement of the stomach and bowels—either constipation, or diarrhœa. Then came a severe splitting head-ache, and intense heat of skin, with pain in the chest, a dull uneasy sense of oppression there, and sometimes slight cough, followed by nausea, and vomiting of bilious matter. In some cases, even at a very early period, the countenance looked livid and dusky, and there was a dark areola around the eyes. The pulse was generally found quick and small; it was seldom full and bounding,or such as would have warranted depletion; in the course of the disease, the pulse frequently became slow, with remarkable intermissions. There was also at times partial retention of urine, requiring the use of the catheter. Generally on the third day, the symptoms were greatly increased in violence, the speech becoming altered and faltering, and the thirst being most intense. On feeling the pulse of the patient at this time, a hot uneasy sensation remained in the fingers,which could only be effectually removed by washing.

In some instances, the fever made its appearance suddenly, the person attacked having been previously in good health,—all the functions regularly performed. the tongue clean, the bowels discharging their contents with their accustomed regularity,the skin cool and perspiring; in a word,no appreciable derangement up to the hour of seizure. The first anomalous sensation that was complained of in these cases was a feeling of numbness, or of creeping from the back and loins down the thighs, accompanied with great prostration. This was shortly followed by severe head-ache, and a sense of constriction behind the orbits, a flushed face, and suffusion of the eyes; the skin at first was dry, but it was afterwards covered with perspiration. Seen early the next day, the patient probably expressed himself free from all feelings of illness,—he had slept tolerably, &c.: but towards noon, the symptoms of the preceding day again made their appearance, and with increased violence, the fever being concentrated, as it were, and at night being accompanied by delirium. The heat of the head was now found to be singularly elevated; heat seemed to be generated faster than it could be dissipated by any evaporating lotion. The stomach and bowels always became deranged at an early period; the tongue was either coated, or dry, brown, or glazed; there was vomiting of bilious matter, sometimes yellow, at other times greenish, or dark green; the bowels were either relaxed or confined, the discharges from them when they occurred being black and very fetid. Pain was also very commonly complained of in the regions of the ileum and colon, as well as a peculiar burning sensation in the stomach; occasionally yellowness of the skin and conjunctiva was observed, and in several cases considerable stranguary occurred. Delirium, generally of the low muttering kind, usually set in from an early period of the disease. Matters continuing to go on unfavourably, the articulation was observed to become difficult, and the voice to falter, it was a mere muttering between the quivering lips; the patient was then seized with tremors and startings, convulsions and coma.

In numerous instances the head was the part principally attacked: the patient complained of feeling great debility, and then of nausea and oppression at the scrobiculus cordis, of stiffness and numbness of the joints generally, at the shoulders, elbows, wrists, &c., or of the loins, hips, knees, and ankles in particular; sometimes a creeping sensation extending from the loins would come on, and the pain of the head would then immediately subside.

Sometimes a patient would be suddenly seized with violent sickness of the stomach and complete prostration; in which case the countenance became pale, or collapsed and yellow, the eyes deeply set in their sockets, and the whole appearance that of approaching dissolution; but by-and-by, reaction set in, and the fever ran its course as in other instances. Occasionally during the remission, as early as the second day, but more generally on the third, a sort of stupor came on, accompanied with a cold, and clammy state of the skin, redness or lividity of the face, langour of the eyes, and injection of the conjunctiva, the general surface being all the while perfectly cool. These symptoms were associated in some with a peculiar dropping of the upper eyelid. In most of the cases where this was observed, the disease terminated fatally.

There was commonly a delusive remission of the fever towards morning, and this continued till near noon, promising amendment; but the disease again recurred about this time, and progressed till midnight, to abate as before on the following morning.

The accession frequently made its appearance about 2 or 3 o'clock in the afternoon, and continued through the night; but as the disease declined, the recurrence of each attack came on later and later every day, and the exacerbations were less and less severe. On the other hand, in bad cases, and as the disease increased in severity and in danger, the remissions became of shorter duration, until they almost entirely ceased.

In many cases the fever was evidently worse on alternate days, a circumstance which was sufficiently remarkable to be noticed by the patients themselves, so that on approaching them it was no unusual thing to hear them speak about their good and bad days, and to find them declaring themselves better or worse, according to circumstances. In some of the more severe cases, after the first remission, no other was very perceptible; so that, from the third day, the fever and great heat continued with very slight abatement only throughout the attack, accompanied all the while with an inexpressible feeling of exhaustion; it was nothing unusual for patients to faint on rising from their beds, or making any kind of exertion. In the earlier stages of the disease, this prostration was the more remarkable, for in the interval some patients would declare themselves perfectly well, but on attempting to rise and walk about, they became pale and death-like, and fell prostrate on the deck.

In some, the disease appeared to arise from a powerful impression having been made on the nervous system at the onset, an impression too powerful to be removed by the efforts of nature; for the reaction was sometimes very slight, the arterial system being scarcely aroused, and soon subsiding again. This was one of the most treacherous as well as deadly forms of the malady,—the danger indeed could only be appreciated by experience, for the patient remained quiet, and complained of nothing but debility. The disease in these circumstances for the most part soon terminated fatally.

From the very commencement of the fever, the intellect and sensations were occasionally observed to be greatly perverted; the patients then declared themselves perfectly well, and asked for what reason they were kept in bed, the face being all the while flushed, the eyes starting, and the skin burning. Such patients sometimes appeared happy; they laughed and chatted, and made no complaint but of being confined to their beds; this condition was at times accompanied by great restlessness. Patients would occasionally be seen to labour under various hallucinations, fancying themselves fastened down in bed, &c. These patients required strict watching to prevent them from leaving their bed and jumping overboard, an event which took place, in several instances, on board the Albert.

The state of the tongue throughout the course of the malady, was very remarkable.

At first, it was in general either thinly spread over with a white film, or covered with a thick raised coating, white, yellow, or brownish in colour. Occasionally, and this was remarked especially in old acclimated persons, the organ was fissured and slimy; but as the disease advanced, the slime gradually disappeared, and then the surface looked clean and bright, the interstices between the papillæ, which were swelled, looking as if filled up by the oozing of blood; on the application of the finger, however, not the slightest stain was communicated. Frequently, this clean, and in some cases, at first glance, healthy looking tongue, suddenly became dry, glazed and brown; but in a few hours it would resume its former clean, moist appearance, and again as suddenly become dry and parched as before. The bright tongue, characteristic of the advanced stage of the disease, was generally observed to commence with a broad red line in the middle, the edges being

still coated; but these cleaning gradually, the whole organ at length presented the same appearance. Whenever the red line in the centre of the tongue was perceived, it was considered a certain indication of the continuance of the disease, and a sign of very unfavorable import. The time required for the tongue to pass through the changes in appearance now indicated, varied with the intensity of the disease; it was short in proportion to the rapidity of the malady; in some cases less than a week sufficed, in others, a month was requisite. Where the fever was masked and creeping under the surface, if I may so speak, the changes in the tongue were less apparent, but equally certain, so that on the approach of dissolution, the clean red tongue also existed.

The post mortem appearances were simply an inflamed and congested state in some portion of the stomach, either about the cardiac or pyloric orifice, and an appearance of the same kind about the cœcum, extending upwards to the ileum, and down to the colon; some enlargement, and probably commencing ulceration of Peyer's glands, were also commonly enough observed. The gall bladder was usually distended, and its duct often seemed obstructed. The organ however that deviated in the greatest degree from the healthy condition was the spleen, which was commonly enlarged, and pulpy, Such were the principal changes of structure discovered after death, and which certainly are not sufficient to explain the various phenomena encountered during life. We are of opinion that the real effects produced by the febrile agent must be sought for in the fluids, more especially the blood.

With respect to the treatment that should be adopted, Dr. Pritchett advises an emetic, if there be derangement of the chylopoetic viscera, followed by a purgative, and the administration of mercury, with James' powder, pushed to salivation, whenever it is practicable. He sets himself and with reason, altogether against venesection, but allows of local bleeding, or counter-irritation, to relieve local congestion or engorgement. To allay the irritability of the stomach, and to quench thirst, soda water, Seltzer water, and saline effervescing draughts were usually given, acid drinks being prohibited, as they were found to increase the sickness and thirst. The bowels were kept free by the constant use of the sulphate of magnesia administered in a state of effervescence, as otherwise it was always rejected. Diaphoresis and diuresis were also encouraged.

The following are Dr. Pritchett's recommendations, respecting the prophylaxis of this formidable fever.

As to the best means of warding off the attacks of the African remittent fever, while employed on the coast, which may with great propriety give name to the disease, (for it differs somewhat from that of other countries) there is no doubt that in addition to ventilation and cleanliness, which are altogether indispensable and primary measures, much stress deserves to be laid on employing the people regularly, short of fatigue; on keeping up their spirits, and furnishing them with amusements; on guarding against their exposing themselves to the sun's rays, or the rain; on supporting the constitution by nutritious food,—in short, by doing every thing that may conduce to maintain the mind and body in a state of high health. On the other hand, depress the spirits of the people, work them hard, expose them to the sun and rain, stint them in their food, and allow them opportunity to indulge in intoxicating liquors, and the result will be most disastrous.

After the very lengthy notice we have given of this important work, and the numerous extracts we have made, it would be almost an act of supererogation to say that we think it a production of much practical value, and one that throws great light upon a subject of the highest interest in every point of view. We strongly recommend it.

PERISCOPE OF THE WEEK.

(London and Edinburgh Medical Journal; Lancet; Medical Gazette; Casper's Wochenschrift; Medicinische Zeitung; Forbes' Lecture on Botany; Archives de la Medecine Belge.)

Amputation at the Ancle Joint.—In a case of disease of the tarsus, extending beyond the limits of Chopart's operation, Mr. Syme performed disarticulation at the ancle joint, which was sound, in preference to amputation of the leg below the knee. The integuments of the instep were cut across in a curved direction, with the convexity towards the toes, and across the sole of the foot, so that the incisions were nearly opposite to each other. The flaps thus formed were next separated from their subjacent connexions, which was easily effected, except at the heel, where the firmness of texture occasioned a little difficulty. The disarticulation being then readily completed, the malleolar projections were removed by means of cutting pliers. The recovery after the operation was slow but perfect, from the state of the patient's constitution; no disturbance of the system nor alarming symptoms followed the operation. The wounds are soundly healed, and any degree of pressure can be borne by the stump, which has a round form well suited for the adaptation of a boot or artificial foot, and is strongly protected from external injury by its thick integuments. Mr. Syme considers that this operation, if found to be practicable with safety and success, may in many cases supersede amputation of the leg below the knee, it being applicable to a large portion of those cases where the extent of the disease precludes having recourse to the partial amputation of the foot, whilst the leg itself remains uninjured. When caries affects the astragalus or os calcis, or, as very frequently happens, is seated in the articular surface between these bones, no form of partial amputation can be of any avail, and attempts to cut out the diseased bone generally prove unsuccessful. In cases where the tuberosity of the os calcis is alone affected, excision may be executed completely and certainly; and it is sometimes, though rarely, possible to extirpate the disease, even when it extends to the articulation, either directly by gouging out the carious part, or by making a perforation through it across the foot, and passing a seton, which may be made the vehicle of suitable applications, such as the red oxide of mercury, the mineral acids, or a saturated solution of the nitrate of mercury. When these means fail or are abstained from, in despair of their efficiency, amputation of the leg is the ordinary resource, and the same measure is of course considered necessary for similar disease of the ancle joint. In the case of compound dislocation of the astragalus, with or without fracture of the malleoli, it is deemed proper, in the first instance, to give the patient a chance of retaining his limb,—unless his habit of body or the circumstances in which he is placed, should be unfavourable for his recovery, when prudence is thought to require amputation of the leg. In all these cases Mr. Syme is of opinion that disarticulation at the ancle joint will answer every purpose, and that even when the bones of the leg composing the ancle are partially involved in the caries, it would be easy to remove all of the bone that is essential to recovery, by sawing off a slice from the articulating extremities of the tibia and fibula, as the caries penetrates to no great depth of the cancellated structure. The advantages of this operation are, less risk to life, a more comfortable stump, and the limb more seemly and useful for support and progressive motion.

Hydatids.—Dr. Theophilus Thomson believes that hydatids are animals possessing independent life, and are formed from their proper ova, being developed in consequence of morbid conditions of the organs wherein they are found lessening the power of those organs to prevent their growth He adduces the assimilative function evinced by their choice of appropriate food, and consequent similarity of contents in various structures and secretions; also the prevalence of particular species in certain countries, and their failing to irritate like tubercles, in support of this hypothesis. Dr. Thomson had lately under his care a woman aged 53, who had been affected with hydatids for 30 years, in consequence, it was believed, of a kick on the abdomen. Twenty-nine years before her death, and at several subsequent periods, many of these bodies accompanied with peculiar and sometimes purulent matter, had issued from an opening near the umbilicus. The patient suffered from much abdominal pain, frequent diarrhœa, anasarca, and great debility, but by leeching, with a soothing and slightly tonic treatment, it was long before her strength entirely declined. On a post mortem inspection two swellings near the umbilicus were found to communicate with a conduit, full of chalky looking matter, of a faint offensive odor, extending upwards to the liver, with which organ it appeared to have communicated formerly. Eight or more sterile hydatids studded the surface of the liver, at the under surface of which was an abscess containing pus and decayed cysts. The gall bladder was much enlarged and distended with similar cysts, and numerous hydatids were also found in the mesentery. Dr. Willshire observes, with respect to the formation of these productions, that he is a convert to the new German school, which does not profess the doctrine of spontaneous generation, but has substituted the hypothesis of special forms of life undergoing metamorphosis in an ascending or descending series. They allow that life could not originate where it had not previously existed, but consider that in the low forms of life remarkable developements occur from metamorphosis, each form of life having its proper metamorphosis. He believes hydatids, etc., owe their formation to a similar mode of development.

Study of Natural History.—The first lesson of natural history is observation. The study of an animal or vegetable species is the perfection of observation as far as that species is concerned. The form, the substance, the qualities, the phenomena of existence, the influence of surrounding objects, are all observed with the greatest precision, and defined so as to be capable of expression in words. No point affecting that species is left untouched. The study of a group or genus of animals or vegetables is in like manner the perfection of discrimination. All the members of the group are compared in all their parts with each other, the relations which they have in common are summed up, and their differences recorded in every possible point of view. The causes of those relations and differences are anxiously inquired into, and a survey is taken of the bearings of the whole group to its proximate allies, and, finally, to all equivalent assemblages in organized nature.

Vital Periodicity.—Dr. Laycock does not claim the discovery of the *idea*, but of the law of vital periodicity; that the period observed in the life of insects, the period of the incubation of the ovum, both of invertebrate and vertebrate animals, the periods of various functional acts and changes, as ovi-position and nidification in birds, and menstruation in females, the critical days of fevers, the periods of agues, and the periods of paroxysmal diseases, as gout and epilepsy, are all reducible to a common denomination,—are all governed, *as to duration*, by the same general law.

NAPHTHALINE AS AN EXPECTORANT.—This substance, when applied to the tongue, causes a peculiar heat and pricking sensation, which extends down the throat and bronchial tubes, and exciting a spasm of the latter, ends in inducing a cough of a kind very efficacious in clearing the air-cells and canals of accumulations of mucus. It is, therefore, a remedy highly suitable in the asthmatic coughs of old people, and others who, from debility, are unable to expel the matters which clog the pulmonary membrane. M. Dupasquier, of Lyons, prescribes it in the form of a syrup and an electuary. The former is composed of fifteen grains of naphthaline, suspended by a small quantity of boiling alcohol in about four ounces of syrup, of which the dose is a teaspoonful every quarter of an hour until expectoration. The other form consists of naphthaline well mixed with any simple electuary, in the proportion of eight grains of the former to half a pound of the latter; dose, a tablespoonful every quarter of an hour, as before.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 201. Vol. VIII. LONDON, SATURDAY, JULY 29, 1843. PRICE FOURPENCE. STAMPED EDITION 5d.

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SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE VI.

Let us now enter more minutely into the subject of respiration, and endeavour to analyse its phenomena. There is a general feeling that the laws of the different kinds of respiration have been laid down in a precise and rigorous manner. But we shall quickly become undeceived, if we give our attention to the subject, and carefully distinguish that which is the immediate result of experience from what has been obtained only by way of induction. We shall then be convinced that but little progress has been made in the study of pneumatics since the time of Lavoisier, of Sennebier, and of Saussure.

Direct observation shows us that the green matter, while developing itself in air or in water, absorbs carbonic acid and disengages oxygen under the influence of light, while in the shade and during the night exactly the reverse takes place. Hence it has been concluded that the oxygen disengaged during the day arises from the decomposition of the inspired carbonic acid, and that the carbonic acid expired during the night is formed by the combination of the oxygen inspired in the night, with the carbon assimilated in the day. Very little attention seems to have been paid to the inspiration of atmospheric air in plants; while the expiration of nitrogen has been verified only in the corollæ, the stamina, and the pistils of flowers. In animals, the respiration would seem to take place in a totally different manner. The animal, to whatever kingdom it may belong, extracts and appropriates to itself the oxygen of the atmospheric air in the act of inspiration, and rejects the nitrogen accompanied with carbonic acid, in the act of expiration;—the nitrogen arising from the decomposition of the air, while the carbonic acid is said to be produced by the combustion of the carbon of the blood, and its combination with the inspired oxygen. Consequently, and this appears true in its simple expression, the animal kingdom expires the gases necessary for the diurnal inspiration of the plant, and the diurnal inspiration of the plant purifies the air vitiated by the expiration of animals; but all the other circumstances of this explanation are hypothetical, and often contradictory within themselves.

If the plant gave back, during the night, the carbonic acid which it had assimilated during the day, of what service would this alternate acquisition and expenditure be? What would remain for the development of the plant, if it retained these elements but for the space of twelve hours, and then restored them to the air entire? Respiration would be a mere folly, and not a function; —the respiratory apparatus a play-thing, and not an organ. Wherefore should asphyxia produce such frightful effects, if respiration were performed for so little purpose? With respect to animals, how is it that there should be, between them and vegetables, in reference to the function which furnishes the primary elements to their development, so great a difference in the mode and the results, at the same time that the development of both kingdoms progresses in so uniform a manner? Can the respiratory organ of the plant inspire carbonic acid with impunity, while the animal cannot breathe this gas without danger of instant asphyxia? Is there not some misapprehension in the designation and the function of the two organs? Does the organ which, in the plant, absorbs carbonic acid, occupy, in the scale of its organisation, the same rank as the organ which, in the animal, expels this fluid? Who ever dissected, so as to see with the naked eye or with the microscope, the organ of respiration in vegetables? Is this function still to be assigned to the minute cells of the epidermis of the leaf, which have been named cortical pores? If so, the confervæ should not respire, as they are destitute of this species of pore. On the other hand, we have shown, in our *vegetable physiology*, that the inspired air is retained in cells of a totally different order, and that this air, which may be detected in these cells by means of powerful glasses, is atmospheric air, instead of being pure carbonic acid. Further difficulties also present themselves in the consideration of this subject. For instance, does the respiratory organ of the animal take nothing from the nitrogen of the air? Does it aspire the atmospheric air in all its parts, depriving it of its oxygen, which it assimilates to itself, or which it elaborates in a special manner? Or, again, do the lungs absorb the atmospheric air in an entire state, separating from it and subsequently expelling the nitrogen, by means of a special elaboration? In the latter case, the expired nitrogen can never correspond to the quantity contained in the aspired air. If the separation of the oxygen take place on the outside and upon the surface of the respiratory organ—according to which hypothesis the expired nitrogen would present no deficiency —we must then admit that any organ whatsoever may elaborate at a distance, and, as it were, by fascination. This is not admissable; for, from what we have said above, one must come to the conclusion that the atom of oxygen of the atmospheric air may be separated from the respiratory surface, by one of the atoms of nitrogen which serve as its planets or satellites. We must, then, allow that the atmospheric air is aspired in all its parts by the respiratory organ, and that, consequently, the volume of gas expired can in no way correspond to the volume of gas inspired.

Does the carbonic acid expired arise from the combination of the inspired oxygen with the carbon of the blood; or else does the carbonic acid become introduced into the blood by some other process of the economy? Direct observation teaches us nothing on this point, and we are obliged to have recourse to analogical reasoning for the verification of either hypothesis. Now, in our opinion, analogy points towards the latter supposition. In fact, the molecules of the blood being a combination of earthy and ammoniacal bases with the organic molecule, which is itself an atomical combination of carbon, oxygen, and hydrogen; if the aspired oxygen were destined to combine with the carbon of the organic molecule, it would necessarily result, that the oxygen and hydrogen of this molecule must be set at liberty on the formation of the new product; for this decomposition takes place in the superficial parts of the respiratory organ, and the disengaged oxygen and hydrogen would not have time to be entirely re-absorbed, whilst the respiratory organ is carrying on its elimination and expiration. The lung would then restore to the air, by expiration, the quantity of oxygen which it would have subtracted from it by aspiration. Now, in the products of aspiration, we meet with neither oxygen nor hydrogen in sufficient quantity to bear out this supposition. Can it be said that the oxygen and hydrogen of the blood-molecule become disengaged, and form themselves into water? But, in the blood-molecule, the hydrogen is in excess as compared to the oxygen. Lastly, we cannot conceive that it is chemically possible to decompose a substance, by means of a simple addition of one of the substances entering into its composition; we cannot decompose sulphate of lime by sulphuric acid. We cannot overcome an affinity by the action of the same species of affinity; we cannot ignite, in oxygen, a substance which has already undergone that species of combustion. If the carbon is already combined with oxygen and hydrogen, how can oxygen set free the combined oxygen? There is in this an absurdity and a contradiction, for it is contrary to all that is known of general chemistry.

In the absence then of precise facts, let us have recourse to analogical comparison. The plant absorbs carbonic acid by night as well as by day, either by its aerial system, or by its subterraneous and radicular system. These two systems can only perform their regular functions in their respective media—that is to say, the one in the light, and the other in the shade or in darkness. It therefore follows that the radicular system carries on its functions by day as by night, without any interruption, for it is always excluded from the light. The aerial system, on the contrary, must undergo an interruption equal in duration to that of the night, and must, moreover, act with an energy and activity proportional to the intensity of the solar light. Some summer nights are so hot and so light, that the twilight-function of the herbaceous portion may, perhaps, almost approach to its morning-function. But what is the character of its function during the day? The disengagement of oxygen which arises, either from the decomposition of the aqueous molecule which the vesicular circulation carries towards its innumerable organs, or from the decomposition of the molecule of carbonic acid transmitted to them by its proper aspiration as well as by that of the roots. But immediately that this elaboration ceases for want of light and of day, what then becomes of the carbonic acid transmitted to it, not only by its own aspiration, but also by the incessant aspiration of its roots? Every organ expels from its interior—that is to say, expires that which it can no longer elaborate. The herbaceous system, in this hypothesis, will then expire carbonic acid during the night; a fact which will not prevent the development of the plant continuing its incessant progress, by reason of the constant elaboration of its roots, and the incessant assimilation of the aspired carbonic acid.

The animal would seem to exercise the function of its respiration in a totally different manner, aspiring night and day the oxygen of the air, and expiring during night, as well as day, carbonic acid and nitrogen, besides the other gaseous and watery products of respiration. Might not this difference be dependant on some deficiency in the knowledge of our respiratory functions? Let us examine the question under this particular point of view. We aspire the atmospheric air, and the vapours commingled with the atmosphere; and we expire the gases eliminated, and the aqueous vapours, under the form of perspiration, on all the surfaces of the body. In this respect, the surface of our body is but an immense respiratory organ, which carries on a function similar to that of the lung. Pneumatic chemistry, it is true, has never been directed towards the solution of this—the most important point of the question. Some ex-

perimental physiologists have even denied to the skin the faculty of absorbing the water of baths, asserting it to be impervious in the midst of the liquid, because they have not observed the level of the water to become changed; as if the change in level could be rendered sensible by an absorption of so minute a nature, and as though the transpiration were not fully able to compensate the deficiency caused by the most ample absorption. Great progress has, however, been lately made in this science, and we may now consider it both analytically and synthetically demonstrated that the organised parietes are permeable to all gases and liquids, and instantaneously elaborate them. It is, moreover, shown that the absorption of carbonic acid, by our epidermic system, must be equally fatal as by the organ endowed with the special function of pulmonary respiration. Our body cannot, then, aspire carbonic acid without danger; it can only procure the proportion of carbon destined to the organisation of its tissues, by means of the absorption of the nutritive liquids. But the plant, in like manner, has the property of absorbing and assimilating to itself the nutritive liquids which it draws from the manure and from the earth. The plant should then have the power of aspiring carbonic acid, and assimilating it to itself with greater impunity than the animal. This would appear to contradict the analogy which exists between the two kingdoms, in all that is essential to organisation; but we shall find this want of parallelism to be dependent principally on the deficiency of our knowledge in this respect. Let us then endeavour to fill up this gap, and re-establish the analogy between these divisions of organized nature. It is, I think, demonstrated in my system of *Organic Chemistry*, that digestion takes place only under the form of a fermentation consecutively saccharine, alcoholic, and acetic. Now, every species of fermentation is accompanied by a disengagement of hydrogen and carbonic acid gases. But, during the act of digestion, the animal does not expel carbonic acid under the form of eructation, at least in its normal state. In the ruminantia, which have neither the power of vomiting, nor that of expelling gases by eructation, this disengagement of carbonic acid gas in some parts of their stomach is so abundant, that it frequently occasions a fatal meteorism. But in the normal state, and when the function of digestion is accompanied by no species of meteorism, what then becomes of the hydrogen and carbonic acid, the necessary products of the digestive fermentation? If they do not pass outwards by eructation, and if they are not retained in the cavity of the stomach, constituting meteorism, it is quite evident that they must be absorbed and aspired by the parietes of the digestive organ. The stomach thus becomes a respiratory organ, which absorbs carbonic acid night and day, similar to the roots of plants. The stomach is the diurnal apparatus of animalization: it carries on a function similar to that of the roots in the earth, and of the leaves in the sun; it absorbs carbonic acid. The lung acts as the leaves do in the shade; it absorbs oxygen and yields up carbonic acid; it is the nocturnal organ; or, rather, the stomach resembles the foliaceous system, and the lung the radicular system, in respect to respiration. The most complete demonstration of this idea is furnished to us in the employment of drinks impregnated with carbonic acid, as Champagne wine, Seltzer water, bottled beer, lemonade, soda-water, &c., which sometimes do not cause a single eructation or discharge of wind from the stomach. As to the disengagement of oxygen, which would complete the analogy, it would appear probable that it does take place somewhere, but that it must be immediately re-aspired by some one of those organs, so various in form and compositition, which enter into the frame-work of the animal economy; the circulation carrying with its usual rapidity all the products of expiration, towards those surfaces endowed with the faculty of election and aspiration.

Carbonic acid is then furnished, to the elaboration of the animal, by means of the elaboration of the stomach or digestive organ. The plant draws it from the manure which surrounds its roots, and the leaves from the atmosphere—the receptacle of the carbonic acid expired by animals, and disengaged from the earth. Such is, in the actual state of our globe, the indefinite circle of exchanges and compensations, between the beings which form the living kingdom. But we must not suppose that, if life were suddenly effaced from the globe, there would be no possibility left of its being restored by a new creation, for want of carbonic acid; even allowing that this meteorological revolution should have subtracted or neutralized all the carbonic acid arising from the gazeification of the organised species. So long as the surface of our globe shall be impregnated with carbon, as it is at present, carbonic acid will not be wanting to the atmosphere; and the light of the sun will always have the faculty of fecundating these elements of the air, and associating them into the organised molecule. Creation, which is continuous, will invariably recommence on a new scale, as soon as each successive revolution may be accomplished. In fact, the equilibrium of the gases imperiously requires that the atmosphere should exist, or become re-established, supposing it possible that it could be removed. The carbonates would disengage their carbonic acid; they would pass from their actual condition to the alkaline state, rather than leave the atmosphere deficient; and the phenomena presented by manuring soils with marl are evidence that, even in the present state of our atmospheric constitution, the carbonates will undergo this transformation. Marl, in fact, when added to a soil or earth of a normal character, becomes a powerful principle of fertilization; it disengages its excess of carbonic acid, when once extracted from the bowels of the earth, and placed in contact with an air less rich than itself in carbonic acid; the marl then surrounds the plant with an atmosphere which is favourable to its development. That carbonic acid accumulates in the depths of the soil, and there supersaturates the carbonates, is plainly demonstrated by the disengagement of this gas, which takes place at the bottom of wells, and which can not arise, in this position, as a product of respiration or of the fermentation of organic matter; it is evidently disengaged from the carbonates of the geological strata, as soon as the bottom of the well has been brought into direct communication with the external air.

The carbonic acid is condensed in the geological strata, by reason of the compression which our atmospheric constitution exercises upon the surface of the globe. This is owing to the relations in weight of carbonic acid and of atmospheric air; thus we see the carbonic acid, which is disengaged from the fermentation of vegetable and of animal matters, and from the respiration of vegetables and animals, remain on the surface of the earth, without ascending into the upper strata of the air, and become eventually taken up again by the earthy bases of the soil which, with the diurnal respiration of plants, thus purify the atmosphere of it. This will explain the fact, that vegetables yield during the night, according to the researches of our physiologists, almost as much carbonic acid as they have absorbed during the day; while the atmospheric air does not contain, according to our means of analysis, a larger quantity of it in the night-time than in the day. We must thence conclude, according to the laws of compression and of gravity, that the geological strata of the globe are so much more impregnated with carbon, as they are deeper from the surface; and, on the other hand, that whenever the atmospheric air becomes rarefied, and exercises, upon the inferior strata, a less degree of compression, there is disengaged from the soil a greater quantity of carbonic acid, not to speak of all the other gaseous products which may exist in the earth.

Lemon Juice in Dropsy.—Dr. Schwabe of Gross Rudestedt, and Dr. Dreschler of Kothen, narrate cases of dropsy, which were cured by the internal administration of fresh lemon juice, a table spoonful or more every two hours. The acid acted very powerfully on the kidneys. As dropsy arises from so many different causes, these cases prove nothing but that lemon juice is a powerful diuretic.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practic of Medicine, and of Clinical Medicine, at University College.

I have given you a sketch of pleurisy in its early stage, in the acute form, and the various circumstances it presents, as well as the many varieties, arising both from the natural progress of the disease, as also from the effusions, and the modifications caused by adhesions. You will find the further details of this subject in my work on diseases of the chest, more particularly the last edition, and some diagrams representing the effect of adhesions. I now, before proceeding to consider the history of the disease, shall advert to the treatment, and particularly to the diagnosis. The history of the disease will be better dwelt upon, when we come to those affections with which it is apt to be confounded, particularly those attacking the substance of the lung. The distinction between this lesion and bronchitis is pretty easy; there is a great amount of expectoration in bronchitis, and an absence of dullness on percussion, or at least if it exists, it is very slight in degree; these are the chief means of diagnosis, and when the liquid effusion is considerable, the distinction is very easy. There is no liquid effusion in bronchitis, nor any sign of it, whereas in pleurisy it is one of the leading characters, and where this is absent, there is the friction-sound.

The treatment of acute pleurisy is of the antiphlogistic kind. This disease is an inflammation of the sthenic kind, affecting the cellular membrane, and causing a considerable amount of inflammatory fever; and it is against such a form of inflammation, that the active antiphlogistic treatment is most required, and in which it is generally most successful. Venesection should be used while there is any catch in the breathing, and until it is removed; this is sometimes an indication for bleeding, even where the pulse is not very hard or quick, for the pulse is not always accelerated in proportion to the other symptoms. In such cases, pain becomes an indication; but, if there be no pain nor catch in the breath, then the pulse must be the chief criterion. Until the hardness of the pulse be removed, or at any rate diminished, blood-letting may be carried on to faintness. But it is usually necessary to follow up the general depletion by local means. This is one of those diseases in which local depletion should always be preceded by general remedies. The inflammation is usually spread over a large surface, and general depletion answers better than in most other cases. Leeches or cupping, more particularly leeches, are effectual, after general blood-letting. After the leeches, or after the cupping, particularly after the leeches, it is useful to apply poultices over the parts, or hot cloths, to promote the bleeding. If the pain returns, or the pulse again becomes hard, or the skin hot, we must abstract more blood. We should also have recourse to other antiphlogistic remedies, more particularly mercury. Mercurial preparations form the most effectual secondary antiphlogistic treatment in inflammations of this kind; the antimonial treatment is very much inferior to it. If the case is severe, give calomel at first without opium, then give it combined with opium, in order to affect the system; if the pain still continues severe, the quantity of opium may be increased, but opium is less eligible in proportion as the skin remains hot and the pulse hard, therefore you can easily see that opium and calomel come in after depletion better than before it. In the asthenic form of inflammation, it may be unnecessary to bleed generally, a few leeches may be sufficient; that is to say, from six to a dozen, or two dozen, to be determined upon by the general strength of the patient, and the previous history of the constitution. Again, blisters are highly useful, for the after-stages of the disease. You may apply a few leeches from the very first, and follow them up by the application of blisters. There is a great tendency in this disease to return, particularly so long as the pulse is frequent, and the cough remains. The signs of improvement are, of course, to be watched, and by them the treatment is to be directed—by the symptoms, rather than

by the physical signs. Of course it is important to observe the amount of the effusion and dullness of the chest, to take into consideration the mode in which the lung may be displaced, as also to take into account the displacement of the different organs, examining them fully, so that you may be able to estimate whether the disease is on the increase or diminution. So long as it is on the increase, the remedies must be strengthened, but these remedies will vary with the symptoms. If there be an increase in the hardness of the pulse, heat of skin, and flushing of the cheeks, then the continuance of depletion is necessary, but this is not very commonly the case; the liquid effusion will continue after the heat of skin and hardness of the pulse have been reduced. Under these circumstances, the chief remedies are mercurials, pushed so as to affect the gums, and if any pain remains, it is necessary to apply leeches. In addition to the mercurial treatment, it is highly useful to act on the kidneys; diuretics, such as blue pill, squill, digitalis, and a little henbane or conium. If the effusion goes on, it is useful to give iodide of potassium in considerable doses, for the object is not only to produce a peculiar effect on the vessels, but also a diuretic effect; large doses of from three to six grains are frequently useful. You must remember that iodide of potassium is a somewhat exciting agent, and there is a fear of inflammation being brought back under its use; it is, therefore, to be watched. This is the chief treatment for the acute form of the disease. Of course you may give the usual remedies for inflammatory fever; antimony may be given to help in subduing the amount of the fever. Small doses of tartar emetic are useful for this reason. The bowels may be acted on moderately, but no advantage will arise from a great amount of purging in this disease. In children, generally, there is more advantage arising from purging than in adults; and in almost all inflammatory diseases, unless the bowels are very open, purgatives may be called in to aid the other treatment.

Now, then, we must advert a little to the subject of the pathological changes which go on in pleurisy. The disease may decline under the influence of the treatment I have just been describing. The fluid may be re-absorbed, and sometimes the lymph also, the lungs expanding as the liquid is absorbed, and their condition may be gradually restored. There are some signs that deserve notice. You have not only a return of the resonance on percussion, but also a return of the respiratory murmur, which becomes fuller and deeper, along with a recurrence of some of the phenomena distinctive of pleurisy at its first commencement. The ægophony will return as the effusion is removed, until it finally ceases altogether. You may consider the return of ægophony as a proof of restoration. This return of ægophony depends on a variety of causes, and we cannot always predicate that it may take place. A great number of explanations of this may be given, but we need not trouble our heads about them. It is sufficient for us to know that, in many cases, ægophony is observed to return in the progress towards cure, and it is to be considered, therefore, a favourable sign. The different organs return to their natural position, as the cure progresses, and all those other signs of disorder, which I mentioned before, gradually disappear. But there are some signs which remain after the rest, for a considerable time; as, for instance, the dullness in the lower part of the chest; and it is not at all uncommon to find dullness remaining in the lower parts of the chest, for many weeks and months after the other signs have disappeared. I believe this arises not merely from the existence of liquid, but likewise from some other accumulations there. You find in persons who have suffered from pleurisy, a considerable amount of adhesions in the lower part of the chest, probably the result of these accumulations; therefore, the dullness on percussion, in this case, need not alarm you nor cause any uneasiness so long as the other symptoms are gone. There is sometimes a little modification in the respiratory sounds. The air entering the lungs that had before been compressed, for a time renders the sounds somewhat of a tubular character, not unlike tubular bronchial respiration, which is accompanied with a louder expiration than usual. This is a matter of fact, and may be explained in various ways. In many cases the liquid is absorbed, but the lymph is not absorbed: it remains, and sometimes the rubbing sound is produced, which is a sign of progress towards cure. During the diminution of the liquid effusion, the lungs are liberated, which has usually been referred to as one cause of the rubbing sound. This is a matter of great consequence. If the lymph effused is of a healthy character, and capable of forming adhesions of a mobile nature, they will not interfere with the motions of the chest. This state is to be judged of more by the general symptoms of returning health, than by any particular sign which the ear can detect. The presence of the rubbing sound is observed in some of these cases, and perhaps it should not be considered quite so favourable as if there were no rubbing at all, for the absence of the rubbing shows that the lymph is altogether removed. With regard to the rubbing sound, there are two or three varieties that it will not do to lose sight of. The commonest kind of rubbing which is heard under these circumstances, is something like the creaking of two pieces of leather one against the other, and this sound is produced obviously by the accompanying motions of respiration. It divides the motions of respiration into a series of jerks. Laënnec compared it to going up and down steps of leather. He referred it to another cause, but we are now pretty sure that it depends on the lymph adhering to the pleura. This, when it exists, is rarely heard for more than two or three days. If the parts become adherent, there is no longer the rubbing on the surface, for they adhere together in consequence of a membranous interposition, a sort of loose cellular membrane being interposed. In the worst cases, where the rubbing is heard for a long time, it seems to imply an amount of elasticity in the membrane and the products arising from its surface. On opening the bodies of persons who have, at some former period, suffered from pleurisy, you find a number of mobile adhesions presenting this remarkable character. In the lower parts of the lungs they are elongated and loose, whereas at the upper parts they are shorter. They may all be loose, and not interfere with the motions of the lungs. These glutinous adhesions are found in the lower part of the chest to a greater degree than in the upper. Now, under these circumstances, the lungs at the lower part of the chest are generally adherent to its walls, and you find adhesions underneath the lungs. These membranes are not susceptible of a high degree of organisation: they are tough and but little extensible, and tend greatly towards subsequent contraction. Hence, they cause what we meet with in various parts of the lungs—patches, with corrugations about them, false membranes, and fibres of a cartilaginous character. These adhesions, in some cases, interfere more or less with the proper function of the lung. We have hitherto chiefly considered the case of removal of the liquid effusion; and we have also shown that, in some cases, lymph likewise may be absorbed, or else that it may remain and become organised into a proper membrane. But in other cases, of a more chronic kind, it may remain without the dispersion of the product for a considerable time; and of this there are two classes of cases particularly to be noticed. First of all, there are those in which the absorption of the liquid ultimately predominates, and the liquid effusion is sooner or later removed; and, secondly, those in which the effusion predominates, and is only to be removed by perforation of the pleura. As the absorption of the fluid proceeds, what will supply its place? Why, I have already said that, in recent cases, where the lung has been pushed aside, and where nothing has been deposited so as to interfere with its expansion, as the liquid effusion is removed by absorption, the lungs rise to fill up their original position: but if the disease has gone on for a long time, there is not only liquid there, but masses of lymph are found upon the surface of the lung, and adhsions are sometimes formed to a considerable extent. Well, as the result of this deposit of lymph on the lungs, several things may arise. The lymph may become organised, and greatly contracted; or it may be that something like the commencement of organisation only takes place, and there may be various domestic changes, as, for instance, its losing a certain portion of water, and becoming more solid. Now, any of these circumstances will have the effect of compressing and binding down the lung. The lung is compressed by the liquid effusion, and cannot rise up into its place: it is bound down and grasped, as it were, by the false membranes, and lymph in a partially consolidated state is spread over its whole surface: or sometimes the lymph is variously distributed in clots, about the lower parts especially; and in that case it interferes considerably with the expansion of the lung. Now, under these circumstances, what takes place? If the liquid gradually becomes dispersed, you will understand that the parts cannot return quite to the same condition in which they were in health. There is this quantity of lymph, which is more or less organised: if it is organised, or is commencing organisation when the parts are in an unnatural condition, this very organisation tends to perpetuate the contraction in various degrees. Now, you find that it congregates in the lowest parts of the chest, and here it is that the greatest change takes place. Again, on the other hand, it may not become organised, or it may be in a state of imperfect organisation; and, under these circumstances, there is a mechanical impediment to the expansion of the lung. What is the effect if the lung expands but partially, under the pressure of the external air? The air rushing along the trachea into the chest, during each inspiration, makes an attempt to enter the lung; it expands some parts of the lung, more especially the tubes; very commonly the tubes are more distensible than other parts, because they are not so much bound down by pressure: the middle parts of the tubes may become dilated, as also the upper parts of the air cells, and I find as a common result—sometimes temporary, and sometimes permanent—on the return of the air into the lung, an emphysematous state of the upper part of the lung, while the lower part is in a state of contraction, and impervious to the air. As a consequence of this, we have a series of displacements taking place, exactly the reverse of those occurring in the earlier period of the liquid effusion: the lungs are incapable of filling up the chest, and its walls become contracted, drawn in, and sunken: the intercostal spaces become drawn in also, more in the middle and the lower parts; there is a partial contraction of the volume of the chest which is obvious to the eye, and can be more distinctly seen than ascertained by measurement, for this reason—that there is a change more in the shape of the chest than in its actual volume. The side that measured half an inch or two inches more, now shrinks in size; and this diminution of size is more in the middle region of the chest than in the upper and the lower parts. This is not the only displacement; for the mediastinum, which was pushed on one side by the effusion, now by the absorption of the liquid is shifted to the other side, according to the pressure acting from the exterior of the chest; and you find, in consequence, that the dull sound on percussion is diminished in the region where it formerly prevailed. The liver is pushed down, and may, in some cases, be retained in this position by the organisation of the membranes in the lower part of the chest; at other times, it may be restored to its former seat. The heart, again, exhibits another curious illustration of the effects of displacement: the heart which, by liquid effusion in the right pleura, was pushed more to the left, where its pulsation was felt even below the left axilla, now becomes drawn back not only to its own natural position, but, in some remarkable instances, far beyond it, towards the diseased side, so as to supply the place of the diminishing fluid. Dr. Stokes mentioned this first, and I have met with several subsequent cases in which this contraction has taken place, and the displacement of the heart in the reverse direction has remained a permanent phenomenon; the heart sometimes remains there during the whole after-life. Dr. Stokes has pointed out another circumstance; and that is, the heart moving about, varying its posi-

tion, and becoming unable to recover its natural tone.

When the disease affects the left side, it is just the converse of what I said before; as the heart before was displaced to the right, now it becomes displaced again further than usual to the left; and an unusual phænomenon is produced: it comes closer to the walls of the chest than it had done before: the lungs being greatly reduced in volume, also the heart being pushed aside to supply the vacuum caused by the diminishing fluid, and the walls of the chest being drawn in by the atmospherical pressure, so as to come into close contact with the heart itself, this contraction of the pleuritic side of the chest is often mistaken for diseased heart. The heart is more in contact with the chest, and the motions are greater, but this arises chiefly from the change of circumstances, more than from any disease in the heart itself. Again, the stomach is drawn up for the purpose of helping to fill up the vacuum; and you find, under these circumstances, the tympanitic sound of the stomach higher up in the chest towards the axilla, so as to diminish the remaining amount of dullness which the accumulation of false membranes otherwise would produce. When you have this contracted state of the lung, what are the physical signs? One thing I should mention about the heart:—you not only have the heart heard beating in contact with the walls of the chest in a great degree, but sometimes the aorta and blood-vessels are felt to pulsate, chiefly on the right side, close under the sternum; and sometimes the heart is hypertrophied in consequence of the influence exercised upon it. A more particular description of the signs of this condition of the chest will be found in the works on the subject, and, therefore, I shall here merely mention two or three points.

The measurement on one side is more or less diminished, but the shape is more altered than the measurement indicates; there is a remarkable flattening of the walls of the chest, and the ribs are depressed and sunken; there is, also, a depression or hollow between the scapula and the ribs; but sometimes the scapula itself is drawn down, and fixed against the sides of the chest. On inspection of the back, the contraction is seen more conspicuously than when inspecting the front of the body. It is seen that the diseased side is smaller from the spine to the sternum than the corresponding part of the healthy side, and that the motions of the chest on one side are materially diminished; the base of the scapula is drawn down, and the angle projects outwards. The spinal column is generally changed in its appearance—this is very common, particularly in children; there is a lateral curvature produced, the concavity being towards the diseased side; and this causes a diminution in the intercostal spaces, from the ribs being brought closer together.

With regard to the physical signs on auscultation:—In this condition of the chest, you hear all the sounds exaggerated in force and character on the healthy side: the healthy lung has to do the duty of both, and this often is effected without any violent effort of the respiratory actions, and without the patient being conscious of it himself. We find, however, that the healthy lung no longer occupies its one side only, but it infringes to a considerable extent on the other side; as far as the lung reaches, you see the intercostal spaces exhibit some degree of motion, and, what is more important, the diaphragm acts with augmented force and increased energy. On the diseased side, the signs heard vary according to the amount of contraction; there may remain, and there often does remain, a portion of the lung entire, into which the air enters with increased force; and this expands the bronchial tubes, so that you have some of the signs of dilatation: the respiration on the diseased side is generally tubular and extensive bronchophony is heard along the whole of the front and upper part of the chest. This is the case where adhesions are formed, and the chest is contracted down by these adhesions; when the parts underneath have a greater proportion of tubular sound. The lower parts of the chest, however, still seem dull; the air enters imperfectly into them, and whatever sound is heard in these parts is usually distant. These are the chief sounds, I think, to be mentioned, with regard to the contracted state of the chest; and they vary very much in amount, and, in some extreme cases, you find the dulless almost universal; in other instances, it is partial; the chief sound being usually at the upper parts of the chest, and towards the right, while the diminution of the sound —the perfect dullness—and the entire cessation of motion, are usually in the lower parts of the chest; for these reasons, that the liquid effusion gravitates to this part, and also because the matter that constitutes the adhesions, accumulates there in greatest abundance. Now, we find in many cases of organic diseases—structural diseases affecting the most important organs, as the heart and the lungs, or even the nervous system, that, if they take place gradually, the constitution is not alarmed,—the whole system accommodates itself to the organic disease, and no immediate material mischief results. So, in this case. There are many circumstances in which contraction of the chest has obliterated one lung, and yet the individual has enjoyed a tolerable share of health; but in a great number of other instances, we find signs of ill-health particularly manifest when the organs are taxed, and where undue exertion is required, or where any fresh inflammatory attack affects the remaining organ. Under these circumstances, the patient is extremely apt to fall under such affections as, otherwise, would have been comparatively innocuous to the health of the individual. I may here mention, that as portions become organized, the remaining liquid effusion is very much dispersed. There is another property exhibited by this structure, viz., that as the organir zation goes on, there is a tendency to still furthe-contraction and degradation. Sometimes this is manifest by the matter passing into tuberculous masses. These are found especially at the base of the lung, owing to the effusion of a plastic or cheesy matter. There is another point to be noticed in connection with this subject: the membranes go on contracting, and, especially when they affect the right side, they cause a contraction of the ascending cava, and an impediment takes place to the return of the blood to the heart; and, as a consequence, dropsy may occur. I have met with a case, where the patient appeared to be getting better, but dropsy supervened, and he died under it. There is another case in which liquid effusion predominates, and constitutes empyema, or an effusion of pus into the cavity of the chest.

ORIGINAL REFLECTIONS ON THE PATHOLOGY OF ANASARCA.

By HENRY FREKE, Esq., Dublin.

To the Editor of the 'Medical Times.'

Sir,—In a late number of your periodical you favoured me by the insertion of a letter, in which I ventured to propose some inquiries relative to the possible mode of action of certain medicinal agents. I then alluded to a statement which appeared in a former number of this journal, to the effect that Dr. Picken considered carbonate of ammonia to be almost a specific in scarlatina, and suggested some facts which I conceived, if considered in connection, might tend to remove some of the obscurity in which that disease is at present involved. Since then I have been enabled to give the subject more careful consideration, and should my reflections thereon be deemed deserving of a place in your columns, I shall feel obliged by their publication.

The researches of modern chemists have led to the discovery that the principal constituents of the blood, namely, fibrin and albumen, not merely resemble each other in chemical composition, but are absolutely *identical*, both as to the number and quantity of their *essential* components. To this fixed combination of carbon, hydrogen, nitrogen, and oxygen (constituting the essential elements of these two proximate principles) the name proteine has been given, and fibrin and albumen are now known to be merely definite compounds of proteine with minute quantities of their *incidental* elements, phosphorus and sulphur.

It is a fact also recently established, and now placed beyond controversy, that the same organic elements, united in the same proportion, and identical in composition with the chief constituents of the blood, form those *vegetable* proximate principles, which by the animal are capable of being converted into blood; so that "vegetables produce in their organism the blood of all animals," and no substances, except compounds of proteine, admit of conversion into blood. The animal organism "is incapable of creating blood out of other substances which do not already contain the chief constituents of that fluid." It "gives to blood only its form." —*Liebig's Org. Chem.*—p. 49.

The various tissues of the body are divided, with respect to their chemical composition, into two great classes, namely, those with an albuminous base, and those which yield gelatine. Between these two classes of tissues there is a striking and remarkable difference. The albuminous (including nervous matter, muscle, glandular structure, and mucous membrane) are all found to be *essentially** composed merely of proteine united to different proportions of oxygen, or of oxygen and the elements of water, and from each of them can proteine be separated by the action of the caustic alkalies. They are all "compounds of proteine." Such is not, however, the case with the gelatinous tissues (comprehending skin, cellular tissues, serous membranes, &c.) "although formed from compounds of proteine, they no longer belong to the series of compounds of proteine."—(*Liebig*, p. 129.) From them proteine cannot by any means be obtained, and their chemical analysis shews that they require for their formation not merely proteine, oxygen, and the elements of water, but moreover require to have superadded to these constituents the elements of ammonia. Nor is the amount of the latter elements required for the formation of these tissues inconsiderable, the proportion being three atoms of ammonia for every two atoms of proteine contained in the gelatinous tissues. The following is the empyrical formula of gelatinous tissue, viz., $2\ \mathrm{Pr.} + 3\ \mathrm{NH}^3 + \mathrm{H\ O} + 7.\ \mathrm{O}.$

It is then apparent that the gelatinous tissues are by much the most highly nitrogenised tissues in the body.

The manifestation of the vital force as exhibited in animals, or, in other words, the phenomena which we designate animal life, being essentially dependant on a *constant* change in the chemical arrangement of the elements composing the animal tissues, that is, on a conversion of organic into inorganic matter, and the products of such conversion not admitting with impunity of accumulating in the system, but eventually† requiring to be removed as *effete*, point out the necessity for the existence of organs by whose agency such *effete* products may be removed. The constancy of this conversion would make it apparent that the operation of such organs must be *constant*. One such organ is the kidney, the *specific* function of which is the elimination from the system of the most *highly nitrogenised product* of this conversion. This substance is urea, the most highly azotised product of organic decomposition with which chemists are acquainted. It contains no less than 45 per cent. of nitrogen.

An attentive consideration of the nature of the processes of formation and conversion of the various tissues of the body, has led me to the conviction, that the source and the *only*‡ source of

I should not, however, have considered myself justified in publishing these reflections without

* The word essentially has been employed, inasmuch as the incidental elements phosphorus, sulphur, lime, &c. entering in minute proportions into the composition of the different tissues, are not here taken into consideration.

† I have used the word *eventually*, inasmuch as numerous considerations induce me to believe that the majority of such products perform an ulterior function previous to their elimination as *effete* matter.

‡ A detail of the line of reasoning which led me to this conviction would occupy considerably more space, than it would be reasonable to expect could possibly be allotted to these observations.

urea in the system, is the metamorphosis of the gelatinous tissues, so that if from any cause *the normal process of the metamorphosis of the gelatinous tissues be departed from, there is no other source in the system whence urea can be derived.*

It was not until my mind had felt convinced of this fact that I became acquainted with the following observations in Dr. Prout's admirable work on stomach and urinary diseases:—"I have long been of the opinion, already repeatedly alluded to, that one mode in which the gelatinous tissues become *effete*, is by their conversion into two classes of complementary principles, of which urea, or its equivalent, constitutes one principle."—(*Introduction*—p. XL.) And again, urea is *not* formed from the albuminous principle strictly so called, but from the *gelatinous* principle."—p. 310.

The subject to which, in connection with the present considerations, I am desirous of directing attention, is to the inquiry—Has urea any function to perform in the economy? I believe it to have an important one. I believe it to be *the specific stimulus of the kidney, without whose operation those organs are incapable of performing their specific function.*

"All the actions of the body," says Sir Astley Cooper, "are excited and sustained by internal and external impressions, called stimulants; the blood, for instance, being the stimulus to the blood-vessels, the bile to the intestines," &c. The extension of this reflection to the function of the kidneys would, I conceive, be calculated to throw some light on the connection existing between anasarca and disease of those organs. To me it would appear that each organ destined to the performance of a specific function, has been endowed for its accomplishment with a specific irritability; that for the manifestation of this irritability, is required the operation of a specific stimulus; so that it is only while under the influence of the operation of its own specific stimulus, that the specific function of any organ admits of being performed. As an example of this, we observe the retina to be alive to the stimulus of light, which on the auditory nerve (having an irritability, and consequently a stimulus peculiar to itself), can make no impression. There is nothing I conceive which would not warrant us in looking on the kidney in the same light. Is it not an organ destined to the performance of a specific function? Has it not been endowed with a discriminating power, whereby it is enabled to select those constituents of the blood which require to be removed, while it allows the others to pass by it unaffected? Has any other organ been endowed with the *same* discriminating power? Is it not the only organ, which in a healthy condition of the system, is *capable* of removing urea? Does not urea (which is now known to exist in the blood) pass by other organs unaffected, unremoved? Can it then be doubted that the specific* function of the kidneys is the removal of urea? And if urea be capable of stimulating the kidney, and *no other organ*, to its removal, surely it will not be questioned that urea is the specific stimulus of the kidney.

The suspension of its function, or (which I conceive to amount to the same thing) the withholding of the operation of its specific stimulus in an organ *requiring periodic rest*, cannot be protracted for any considerable time without producing, in the first instance, diminution of functional power, and eventually organic degeneration of that organ. Of this the eye may again afford us an example. Impaired vision, loss of sight, and ultimately, structural disorganisation of the organ of vision, have been known to result from the long protracted absence of light. But in an organ *not admitting of periodic rest*, in an organ requiring, for the well being of our economy, to be constantly, to be uninterruptedly, in operation, surely it cannot be supposed that, for the production of such ill consequences, that suspension should necessarily be protracted? Might we not apprehend that suspension of its function, in such an organ, would *rapidly* be followed by organic degeneration of its structure? Such I conceive to be the case. And is not the kidney an organ such as that we now speak of? Can it admit, for a moment, of suspension of its functions, without the consequences being prejudicial to the system? Did not nature design that, during *each moment* of our existence, that organ should be actively in operation?—for has it not been made an essential condition of that existence, that matter should *at all times* be undergoing conversion?

If, then, it be admitted that the *normal* product of the metamorphosis of the gelatinous tissues is urea, and that urea is the specific stimulus of the kidneys—if it be allowed that the temporary withholding of its specific stimulus from an organ, not admitting of periodic rest, must impair the functional power of that organ, and that functional disease protracted becomes organic—if it be granted that the kidney, in consideration of the *constancy* of the conversion of organic into inorganic matter, is an organ such as now spoken of—does it not become apparent, that the *abnormal* metamorphosis of the gelatinous tissues tends to the production of organic disease of the kidneys? The proximate cause of anasarca, whether resulting as a sequela of an exanthematous fever, or, as it occurs in the disease called "Bright's disease of the kidneys," I believe to be the abnormal metamorphosis of the gelatinous tissues, whereby urea, if formed, is formed in insufficient quantity.* The kidney I believe to be secondarily affected, and that suspension of the function of that organ is the natural and necessary result of this supposed proximate cause. By a suspension of the function of the kidney, I understand a loss of that power, whereby this organ was enabled to discriminate between the organic and inorganic constituents of the circulating fluid; to select the latter for removal, to leave the former unaffected. The result of such suspension must be, that the *organic* constituents of that fluid will be removed; we will have *albuminous urine;* while the inorganic will remain in the system, and the abnormal products of the metamorphosis of the gelatinous tissues, acting as irritants on those tissues from whence they were produced, will effect the well-known result of irritation of the gelatinous tissues, namely, the *effusion of serum.* Of this result of the irritation of gelatinous tissues, we have a familiar example in the action of blisters on the skin. Here then we have the most conspicuous of the phenomena observable in anasarca, viz., urine containing albuminous matter, diminished in specific gravity, (from the deficiency of its inorganic constituents), and having a deficient quantity of urea, accompanied with a serous effusion, generally throughout the cellular tissue of the body. Can the cause assigned be considered adequate to the production of these effects?

In corroboration of these views I would observe, that I know of no disease, with one exception, but that under consideration, in which it is stated, on any respectable authority, that urea is either absent or deficient to any considerable amount in the urine.† The exception to which I allude is diabetes. It is true that in this disease it is the opinion of one of the first authorities on such a subject that the place of urea in the urine is occupied by sugar. In reply to this, however, I have to observe that Dr. Kane, who, for depth of research, familiar acquaintance with chemical phenomena, and accuracy in chemical analysis (as demonstrated by his recent elaborate researches on the nature and constitution of the compounds of ammonia, published in the transactions of the Royal Irish Academy, as also by his able treatise on the elements of chemistry), has proved himself to be second to no chemist of the age, that this distinguished chemist, I say, makes the following observation:—"I accidentally observed some phenomena, which rendered it probable that the quantity of urea in diabetic urine, is not so small as is generally considered, and finally led me to the conclusion, that in this disease the *urea is not at all diminished in quantity*, but that a man secretes in a given time as much of that principle, while dying of the most severe saccharine diabetes, *as he does in a state of the most perfect health*."—(*See the Dublin Journal of Medical and Chemical Science, for March*, 1832.—p. 16.) Dr. Kane then goes on to show that the apparent absence of urea in diabetic urine, is owing to the existence in that fluid of sugar, the presence of which alters the action of the ordinary tests for urea.

The derangement which I conceive to be the proximate cause of anasarca (viz., abnormal metamorphosis of the gelatinous tissues,) is, I believe, in the greater number of cases* produced by a deficient supply of oxygen to the gelatinous tissues, "That portion of oxygen," says Professor Liebig, "which is not consumed in the growth or reproduction of organs, combines with the substance of the living parts, and produces, by its union with their elements, the act of transformation, which we have called the change of matter,"—(*Org. Chem.* p. 173.) And this opinion, I conceive, gains support from the exciting causes of that disease, as laid down by the first writers on the subject.

Drs. Osborne and Prout agree in stating, that the most frequent exciting causes of this affection are "the combined agency of cold and moisture," and "abuse of spirituous liquors."—*See Osborne*, p. 26 & 32; *Prout*, p. 152.

1st. As to cold and moisture.—The direct *primary* effect of exposure to cold must, in all cases, be to diminish the amount of the cutaneous circulating fluid; all subsequent effects (such as suppression of perspiration, &c.) can only be secondary and consequent on this. But one great function of this fluid is to supply, by means of the "carriers of oxygen," (its red globules), that oxygen whereby the tissues may be metamorphosed; every diminution, then, in the supply of blood to a tissue, must be accompanied by a proportional diminution in the quantity of oxygen, appropriable to its conversion; and when this tissue happens to be gelatinous, as the skin, there must be a corresponding diminution in the *quantity of urea which is formed.*

2nd. As to the abuse of ardent spirits. "The abuse of ardent spirits," observes Dr. Prout, "is, in this country, of all others the most frequent exciting cause of the kidney affections."—p. 152. But what is the direct effect of an excess of ardent spirits? The following is Professor Liebig's view of the manner, in which alcohol operates on the system. "It is, consequently, obvious, that by the use of alcohol, a limit must rapidly be put to the *change of matter* in certain parts of the body.

making some attempt to establish a point so fundamental to my argument, were it not that I had been so fortunate as to find my views on the subject corroborated by so high an authority. This discovery, for the reasons mentioned, has induced me to abandon my original intention.

* The other functions of these organs, such as the removal of water, various salts, &c., cannot be considered *specific*, inasmuch as the same function is performed by other organs, the perspiratory glands for example.

* Dr. Osborne, in his excellent treatise on dropsies makes the following observations:—"It appears from the experiments of Dr. Christison, that the urine in those cases (Bright's disease) is of less specific gravity than healthy urine, and that the *urea is always diminished*, the quantity rarely exceeding one half, and in some cases amounting only to one fifth of that in health."—p. 17. And again, "In those cases the urine differs from that of health, by the presence of a considerable portion of albumen, and by the deficiency of urea."—p. 26.

† In the above observations I, of course, allude only to the *absolute* amount of urea. In hysteria, and other nervous affections, where the watery constituent of the urine is alone unnaturally augmented, the urea will, in its relative quantity, of course, be proportionally diminished. Nor do I here take into consideration *alkalescent* urine, accompanied with an absence or deficiency of urea; inasmuch as that alkalescence may be the result of a conversion *in the bladder* of urea into carbonate of ammonia. To this subject I shall again presently refer.

* I have used the words *in the greater number of cases*, inasmuch as I conceive it possible, that in the anasarca consequent on scarlatina and other eruptive diseases, this proximate cause may perhaps be the result, rather of a derangement in the *nutrition* of those tissues, or of a *deteriorated* oxygen, (perhaps, in some instances, of both) than of a deficiency in the *amount* of oxygen with which they are supplied for their conversion.

The oxygen of the arterial blood, which, in the absence of alcohol, would have *combined with the matter of the tissues,* now combines with the elements of alcohol."—(*Org. Chem.* p. 239.) That the skin is particularly affected by an indulgence in alcohol, is obvious to all who have seen habitual drinkers.

In further confirmation of these views, I would observe, that in phthisis (a disease supposed to depend on an *excess of oxygen* in the system), *urea* is found *in excess* in the urine.* By an exposure to cold, then, or by an abuse of ardent spirits, there is produced, in the one case, a diminution in the quantity of blood (consequently of oxygen) sent to the most important gelatinous tissue in the body,—namely, the skin, (probably also the subcutanous cellular tissue); and, in the other, a diminution in the quantity of oxygen appropriable to the conversion of the tissues. One necessary consequence must, in both cases, be a defective metamorphosis, which may be followed by the train of phenomena already detailed.

On the subject of treatment I would offer a few observations. On this subject, Dr. Osborne makes the following remark:—

"Whenever general perspiration came on, either spontaneously or in consequence of medicine, the cases always terminated favourably."—p. 27. For this reason, that eminent physician makes diaphoretics occupy an important position among his remedies. The mode of operation of diaphoretics in this disease (anasarca, with albuminous urine), admits, I conceive, on the principles I have been attempting to establish, of an intelligible and simple explanation. One effect of diaphoretics must obviously be to increase the supply of blood —consequently of oxygen,—consequently the metamorphosis or change of matter in the most important gelatinous tissue in the body, and consequently the *amount of urea.*

There are, in our pharmacopœia, certain medicinal agents, from which, on the supposition that the principles I have been attempting to establish, have their foundation in the true pathology of this disease, I should on theoretic principles be led to anticipate peculiar benefit, if administered in its earlier stage. Should experience prove these anticipations to have been well founded, would it not contribute to the support of our theory? The most important of those substances to which I allude, are iron and the carbonate of ammonia. The indication of cure, before *organic* disease of the kidney is established, is (in accordance with our views) to restore to that organ its stimulus. This, I conceive, can best be effected by a perfect conversion or oxydization of the tissues; for this there is a demand for an increased supply of oxygen. I know of no means so well adapted for the fulfilment of that demand, as the administration of the salts of iron. The immediate effect of an introduction of iron into the system, is an augmentation of the number of the red globules of the blood,—an increase in the number of the "carriers of oxygen."

In confirmation of the opinion that iron might prove useful, and also that the disease may have originated in a deficient supply of oxygen, I make the following quotation from Dr. Prout:—

"The proportion of *hœmatosin* in the blood, seems to go on steadily decreasing as the degenerating process advances; so that in the last stages, the quantity of this ingredient is sometimes reduced to less than one third of the healthy average proportion."—p. 162.

The principles on which I conceive carbonate of ammonia might prove efficacious in restoring to the kidneys their stimulus, are different from those on which I have recommended iron.

Between carbonate of ammonia and urea, there are many striking points of resemblance. They are both most highly nitrogenized products of organic decomposition. In each the amount of nitrogen (the element which renders urea remarkable, and the existence of which, I conceive, adapts it to be the stimulus of the kidneys) is relatively to the carbon, exactly the same. The facility with which urea is converted into carbonate of ammonia, is a fact well known to chemists; a conversion which not unfrequently occurs spontaneously in the bladder, being a common cause of alkalescent urine.

* See Dr. Bence Jones' recently published work on Gravel, Calculus, and Gout, p. 11.

To effect this conversion, nothing further is required than the addition, to one atom of urea, of two atoms of water; the result being two atoms of carbonate of ammonia. The following is the empyrical formula of this conversion.

$$\left.\begin{array}{l}\text{1 at. of urea} = C_2\ N_2\ H_4\ O_2 \\ \text{2 ats. water} = \qquad\quad H_2\ O_2\end{array}\right\} = \left\{\begin{array}{l}\text{2 ats. carb. acid} = C_2 \qquad\quad O_4 \\ \text{2 ats. ammon.} = \quad N_2\ H_6\end{array}\right.$$

$$\text{Sum} = C_2\ N_2\ H_6\ O_4 \quad = \quad \text{Sum} = C_2\ N_2\ H_6\ O_4$$

"Urea," says Dr. Bence Jones, "dissolved in pure water, does not undergo this change, but it takes place in the urine in consequence of changes going on in the mucus, which is secreted by the membrane lining the cavity of the urinary organs. At present, this mucus is looked on as a kind of ferment, and its action on urea is considered as an instance of catalytic action.—In the healthy state, this action of the mucus does not take place until some hours after exposure to the action of the air; but when the secreting membrane is inflamed, it appears that the mucus undergoes this change more rapidly, and sometimes even without previous exposure to the air. In such cases it is by no means unfrequent, to find that the fluid which is in contact or mixed with the mucus becomes first *alkaline*, and afterwards the remainder becomes so."—*See Treatise on Gravel, Calculus, and Gout, by Dr. Bence Jones;* p. 83.

From this it would appear obvious, that the absence or deficiency of urea in alkalescent urine, is no proof that that substance has not in due quantity performed its function on the kidneys, and consequently can be no argument against the position I have been attempting to establish.

The existence of this identity, with respect to their most important element, the facility with which urea is converted into carbonate of ammonia, and the fact of carbonate of ammonia being a *fully oxydized** product of organic decomposition, and consequently, I conceive, little likely to undergo chemical alteration in the system previous to its reaching the kidneys;—all these considerations, I say, have induced me to conceive it possible, that carbonate of ammonia might, in some degree, supply the place of urea to the kidneys—might, in fact, recal those organs to the performance of their proper function.† And such, I conceive, may be the principles on which carbonate of ammonia has proved to be almost a specific, in the treatment of scarlatina.

One word more, and I have done. In the treatment of this affection, I should be induced to expect benefit to result from the administration of gelatine, as an article of diet. In the commencement of this letter I observed, that no substances, except compounds of proteine, were capable of being converted into blood; I also observed, that gelatine was not a compound of proteine, and, consequently, it is incapable of contributing to the formation of that fluid. "No substance analogous to the tissues yielding gelatine is found in vegetables. The gelatinous substance is not a compound of proteine; it contains no sulphur, no phosphorus, and it contains more nitrogen, or less carbon, than proteine. The compounds of proteine, under the influence of the vital energy of the organs which form blood, assume a new form, but are not altered in composition; while those organs, as far as our experience reaches, do not possess the power of producing compounds of proteine, by virtue of any influence, out of substances which contain no proteine. Animals which were fed exclusively with gelatine, the most highly nitrogenised element of the food of carnivora, died with the symptoms of *starvation*; in short, the gelatinous tissues are incapable of conversion into blood.—*Liebig's Org. Chem.* p. 129. Notwithstanding that such is the case, gelatine is an extensive and probably an important article of our diet, while no traces of it can be detected either in the fœces or the urine. What then becomes of it? What function does it perform? For surely it does something in the system. The following is the suggestion which Professor Liebig considers not to be "unworthy of a closer investigation." He conceives it possible that gelatine, when taken into the system in a dissolved state, is again converted in the body into cellular tissue, &c., (viz. the gelatinous tissues); and the facility with which "a dissolved substance" is, "chemically speaking," converted "into an insoluble organ of vitality," is, he conceives, in favour of this view.—(*Org. Chem.* p. 98.) If such be the case, gelatine must leave the system partly in the form of urea. "And when," observes Professor Liebig, "the powers of nutrition in the whole body are affected by a change of the health, then, even should the power of forming blood remain the same, the organic force by which the constituents of the blood are transformed into cellular tissue and membranes, must necessarily be enfeebled by sickness. In the sick man, the intensity of the vital force, its power to produce metamorphosis, must be diminished as well in the stomach as in all other parts of the body. In this condition, the uniform experience of practical physicians shews, that gelatinous matters in a dissolved state exercise a most decided influence on the state of the health. Given in a form adapted for assimilation, they serve to husband the vital force, just as may be done in the case of the stomach by a due preparation of the food in general. Brittleness in the bones of graminiverous animals, is clearly owing to a weakness in those parts of the organism, whose function is to convert the constituents of the blood into cellular tissue and membrane; and if we can trust to the reports of physicians who have resided in the East, the Turkish women, in their diet of rice, and in the frequent use of enemata of *strong soup*, have united the conditions necessary for the formation both of *cellular tissue* and of fat."—*Org. Chem.* p. 98.

Such reflections from this great philosopher induce me to conceive, that gelatine might prove *peculiarly* efficacious in certain diseased conditions of the cutaneous and other gelatinous tissues.

* By the words *fully oxydized*, I mean *as* fully oxydized as it is at all likely to become in the animal organism.

† I am not aware whether urea has ever been employed as a medicinal agent. Could the foregoing considerations be deemed sufficient to warrant a trial of its effects in this disease?

ON THE PROPER METHOD OF STUDYING CHEMISTRY AS A BRANCH OF PROFESSIONAL AND GENERAL EDUCATION,

Forming part of a Lecture, concluding the Chemical Course in the University of Glasgow, 25th April, 1843.

Delivered by Dr. ROBERT D. THOMSON.

BEFORE bringing the chemical winter session to a close, I trust I may be excused if I direct your attention very briefly to the importance of the study of chemistry, and to the proper mode of acquiring a knowledge of the science. And in order to place this in a practical point of view before you, I think I cannot avail myself of a better method than to detail to you shortly the results of some of the investigations which have been undertaken during the past winter in the laboratory. Chemistry being a truly practical science, it is only by *working* that one can become familiar with its details. Lectures on chemistry can only assist you in practically working out a knowledge of the science. They are powerful, nay necessary auxiliaries; but by attending lectures alone, no man ever became a chemist, while by working, even without lectures, many chemists have been produced. In these observations I refer to lectures in which the lecturer alone performs the experimental illustrations. But there is another kind of lectures which have been introduced latterly into many schools, erroneously known under the title of Practical Chemistry, in which a number of students are formed into a class, headed by their lecturer, and are made to perform, by dictation, as many experiments as they conveniently can execute during one hour per day, or in some cases three times per week. The second kind of lectures, when arranged so as to make each student personally perform the experiments, is a decidedly important addition to the first kind of lectures; but if they are allowed to degenerate into a mere *short course of lectures* of the

first description, and dispense with practice in the laboratory, which is very liable to happen, it may with some truth be apprehended, that the shadow is substituted for the substance, and thus students are led to believe that they are practically acquainted with chemistry while, in fact, they have not been taught to handle a crucible. Those who have passed through the ordeal of their studies, and have engaged in their practical application to the business of life, reflecting upon the disadvantages under which they have laboured in their subsequent career, from a misdirection of their minds in their own practical education, must ever sympathise with their juniors who may be liable to suffer from similar influences. It is therefore usual with lecturers to bewail their own inattention to study in their youth, and to ascribe their deficiency to idleness. There may be some truth in this conclusion, but much depends on the proper direction of the mind to study.

Having had peculiarly extensive opportunities of comparing the methods of teaching chemistry in various parts of this country, and likewise on the continent of Europe, I have no hesitation in affirming, that the only method of studying practical chemistry is that introduced first by Dr. Thomson into Edinburgh, in the beginning of the century, and afterwards by him, in 1817, into Glasgow, viz., by the students personally working in the laboratory.

By combining analytic operations in the laboratory with the practical lectures alluded to, I believe that much good may be effected, and during the winter the laboratory pupils have accordingly been formed into a class during one hour, in which they have been exercised in the preparation of substances, and in manipulations, arranged in a systematic order.

The students, on commencing practical chemistry, should occupy himself with a simple analysis. To take to pieces a body consisting of two or three ingredients will probably be enough for him to manage in the first instance. With a medical student, some medicinal salt,—with the manufacturer, some ingredient employed in the arts,—and with the farmer, some simple constituent of the soil may properly form their respective introductions to the practice of chemistry. He may then proceed to the analysis of minerals, and to more complicated substances. During the winter, the number of minerals analysed has been very considerable. I shall only, however, allude to two of these, as they are not destitute of interest. Dr. Black examined the water of hot springs from Iceland, and found it to contain, in solution with soda, silica, or sand, a substance which, under ordinary circumstances, is well known to be insoluble in water. This was a most important observation, because it afforded a key to the explanation of the various appearances which silica assumes, whether as chalcedony, opal, or agate, and indicated the existence, at some period, of hot springs in those localities where such minerals are met with. Deposits in the neighbourhood of hot springs, it might be presumed, would contain much silica, and this is proved to be the case by the following analysis of a deposit from a hot spring in New Zealand:—

Silica, ...	77·35
Alumina, ...	9·70
Peroxide of Iron, ...	3·72
Lime, ...	1·55
Water, ...	7·66
	99·68

Another mineral analysed, from New Zealand, was the native Prussian Blue, or phosphate of the protoxide of iron. Its constituents were found to be—

Water, ...	28·4
Organic Matter, ...	2·8
Silica, ...	5·2
Phosphate of Iron, ...	62·8
	99·2

Both of these analyses were made by Mr. Robert Pattison.

I notice this substance more readily because it was in directing the analysis of it that my attention was again recalled to a proper mode of separating phosphate of iron from other phosphates, or iron from earthy oxides; and I think that by the use of cyanide of potassium, as prepared by Professor Liebig's easy process, or also by the use of tartaric acid, this separation can be easily effected. The study of this mineral was therefore a good introduction to the numerous analyses of soils which have been conducted in the laboratory during the session, principally by agricultural students.

In the following table the results of four analyses of the same soil, from Erskine, are given, as executed by Messrs. Michelmore and Watson:—

	W.	M.	W.	M.	
1 Silica	240·86	214·5	247·1	213·87	
2 Water of decomposed soil. .	111·17	110·60	90·5	53·95	
3 Stony Matter	70·80	74·50	49·0	93·20	
4 Organic M. containg. of car.	20·82	9·25	20·50	8·15	
Ditto, Azote		2·15		1·8	
Hydrogen, Oxygen and water of undecomposed soil.		7·55			
5 Per. iron and Phos. — Perox. iron . .		55·74	41·29	53·93	59·93
Phos. iron . .				1·9	
Phs. lime & mag.				2·9	
Phos. alum . .		.		1·2	
6 Carbonate of lime	5·97	9 1	18·24	24·79	
7 Alumina	15·40	16·40	6·23	6·19	
8 Magnesia			2·27	2·20	
9 Sulphate of lime			0·60	1·00	
10 Chloride of potassium . . .			0·60	0·06	
11 Chloride of sodium				0·14	

W. and M. at the head of the columns indicate the names of the gentlemen, Messrs. Watson and Michelmore, by whom the analyses were performed. The first columns constitute the analysis of the soil when fresh; the latter after it had remained some days in the laboratory.

In this table I may call your attention to what must be viewed as an improvement in the analysis of soils. I found that the results by the old plan, of determining the organic matter of soils, were erroneous, and I have accordingly been in the habit of late of ascertaining the quantity of carbon and azote (the important elements for the nutrition of plants) by organic analysis. The expensive nature of oxide of copper induced me to try black oxide of manganese and red oxide of iron as a substitute for the combustion of the organic matter, and in every instance the resulting carbon was so much in excess that I was obliged to abandon these bodies. Mr. Michelmore obtained the following results with the above soil:—

1. 10 grs. gave	5·4 per ct.	carbon	with red ox. of iron.	
2. 10 grs.	6·8	—	—	——
3. 10 grs.	7·05	—	—	black oxide of manganese.
4. 10 grs.	1·85	—	—	black oxide of copper.
5. 10 grs.	1·63	—	—	——

The soils were in each experiment from the same parcel, and all at the same temperature.

But the analysis of a soil is of little value without the analysis of the grain which grows upon it; because it is by a comparison of the two results that we are enabled to determine whether a soil is calculated to produce a crop of a particular grain; for as the grain derives its inorganic constituents from the soil, it is obvious that this affirmation must hold with truth in all cases. Analyses of grain grown with different manures, have therefore engaged our attention, and some analyses of this kind I present to you executed by Messrs. Michelmore and Watson, of oats, including the husks, grown at Erskine with—

	Foreign Guano.	Sul. Soda.	Brit. Gua.
Organic Matter, . .	967·25	970·58	972·24
Silica, ...	11·37	15·28	13·37
Alkaline Phosphates, .	1·87	2·00	3·75
Phosphates of Lime and Magnesia . .	8·76	11·63	10·64
Phosphate of Alumina,	0·60	0·50	trace.
Phosphate of Iron, .	trace.	trace.	trace.

For the quantity of inorganic matter in other specimens of oats, I refer you to the "Proceedings of the Philosophical Society of Glasgow," No. 6,—just published.

There is still a kind of inquiry relative to agriculture, which forms the connecting link between that art and the science of health, and is therefore of equal value to the student of medicine and agriculture,—I refer to the determination of the amount of the nutritive part of grain. Bread, we found in a preceding part of the course, contains the elements of the blood, and in proportion as the amount of these principles calculated to produce this fluid, are greater or less in the aliment consumed, so is the latter possessed of superior or inferior nutritive power. The following table gives the result of a series of experiments upon the bread and flour of different countries:—

	Nutritious Prin. Per Cent.	Equiv.
Naumburg Bread, (Prussia,) .	16·49	100.
Dresden Bread, ...	14·30	115·31
Berlin Bread, ...	14·21	116·04
Canada Flour, ...	13·81	117·23
Essex Flour, ...	13·59	121·33
Glasgow unfermented Bread, .	13·39	123·15
Lothian Flour, ...	12·30	134·06
United States Flour, ...	11·37	145·03
Do. do.	10·99	150·00

The foreign bread was brought by myself from the towns mentioned; the flour was supplied by Mr. Wilson, baker, of Gordon-Street. The analyses were made by myself, and some of them were repeated by Mr. Watson and Mr. Michelmore. The numbers in the table were obtained by determining the quantity of ammonia which can be formed from the azote contained in the flour. The process is exceedingly simple, and can soon be acquired. The second column is read thus: 100 parts of Naumburg bread are equal in nourishing power to 150 of States flour, &c.

The process, exhibited to you in a former lecture, for the mechanical analysis of flour is equally interesting to the farmer, and surgeon, and should be mastered by both. The following was conducted by Mr. Michelmore, and was the specimen from the United States noticed in the table. The coincidence in respect to the nutritive principles between the results of the two analyses conducted in different ways, is highly striking:—

			Per Cent.
Starch		902·	68·73
Gluten,	Fibrin, . 116·8; Casein, . 5·27; Gluten and Oil, 3·04; Loss—Water, 5·29	130·4	9·93
Albumen, ...		14·0	1·06
Gum, ...		60·4	4·60
Sugar, ...		16·3	1·24
Water, ...		189·3	14·44
	3 oz.=	1312·5 grs.	100·00

Your time will not permit me to enlarge further upon the subject of practical chemistry, that is, the dedication of as much time as possible in the laboratory to operations which require, on the part of the pupil, the exercise of the mind and hands; but before concluding, I cannot too much insist upon the indispensable nature of this study to the manufacturer, farmer, and medical man; for it is the essence of the arts of calico printing, dyeing, bleaching, &c. and we can in vain look for any permanent advance in agriculture until farmers are educated practically in the elements of chemistry, just as the learn to plough, sow, and reap, or to sum up accounts. Without such a knowledge they will either be compelled to be sceptical or apathetic, as the chemical language addressed to them must be that of an unknown tongue or they must ever be subject to be misled by the popular fallacies of the chemical empiric. To the surgeon and physician, practical chemistry, such as I have defined it, is as requisite as practical anatomy, and soon we may expect to find a session in the laboratory, a part of the medical curriculum. The school which shall first take this position will show itself most alive to the progress of science.

The expense has been much overrated; and I believe the arrangements now adopted in the Glasgow College Laboratory will bring practical chemistry within the reach of most young men who desire to improve their minds by the study of one of the most valuable and interesting sciences with which man can occupy himself. But, as a branch of general education, I know of no study equally calculated to develope the mind. To make an analysis, that is, to divide a body composed of many parts united together into its ultimate constituents, a student must remember and reason, if he is properly taught; and if he enters upon a research, that is, a combination of analyses, one ex-

periment arising out of another, until the united results enable a conclusion to be drawn, he becomes a disciple of Lord Bacon—an inductive philosopher, the safest condition for all study and every profession. Irrespective, then, of the important knowledge to be acquired in the laboratory, the training which the mind undergoes is of the highest value, and I may appeal with confidence to all those who have passed through the studies of the laboratory whether, whatever their future occupation in life has been, they have not had their powers of observation sharpened, and their appreciation of evidence imporved by their chemical education.

[The above paper was, from press of matter, unavoidably omitted in our last week's number.]

TO CORRESPONDENTS.

College of Surgeons.—*A Member may be certain that we are not inattentive to the movements of the twenty-one gentlemen of the empire, to whom this institution is* really *a source of profit and interest. They may name the new "Fellows" of the College, and spend much time and temper in squabbles as to who shall, and who shall not, be among the number; but we shall be much disappointed if the manly sense of the great body of the members will not teach the worthy Council that its wishes, whatever trouble they take about them, are very different things to professional laws.*

Errata.—*In last Number the printer made us make a blunder rather formidable to good, and pleasing to* bad *authors. We were represented as saying that our arrears of reviews would not* now *be discharged. It should have been, "they will not therefore* not *be discharged." In the leading article, also,* improved *was used for* impugned *in one of the sentences.*

K. L.—*The case to be published should come from the physician himself.*

X. Y. Z.—Two or three Constant Readers—Joseph Surface—An Anatomist—Querist—An Old Subscriber—Dr. W. *declined.*

A Student.—*We have published Courses of Lectures on Surgery, by Laurence—on the Generative Organs, by Professor Owen—on Diseases of Women, by Velpeau—on Pneumonia, by Chomel—on the Comparative Anatomy of the Nervous System, by Professor Owen—on the Diseases of the Nervous System, by Dr. Marshall Hall—on the Normal Development of Organs, by Serres—on the best modes of Detecting Arsenic, by Orfila. The six last Courses were published under the present management, and will be found in Vols.* 5, 6, *and* 7. *The price is* 7s. 6d. *and* 10s. *each volume, bound in boards.*

A Poor Man *had better consult a respectable practitioner. We do not give advice in the* Medical Times.

THE MEDICAL TIMES.

SATURDAY, JULY 29, 1843.

La verite est eternelle comme la divinite elle-meme.
HAHNEMANN.

THE history of the human mind has its infant epoch of ignorance—its age of growing acquisition—its grand periods of display in philosophical attainment: now and then its boldness, or even temerity, is shewn in scepticism—more frequently, however, its weakness is exposed by credulity. Wise men have said that a medium path is the safest, but the mass of mankind, on all hands, declare that they *like* extremes the best.

Whether in religion, in the affairs of common life, in literature, or even in matters of science, that often takes the strongest hold of our weakness, which is best calculated to gratify our love for the marvellous, especially if, working largely on our imagination, it does not at all trouble our reason at the same time.

Paracelsus has been immortalized by the monstrous things that he *said*. The good that he did, the rational investigations he made, or the discoveries he now and then stumbled upon, would have been forgotten, or, at any rate, would have received a much less share of attention, had they been published separately and alone. His accounts of metallic preparations employed by himself in the cure of disease, and his relation of the wonders he worked with them, are small things when compared with his transmutation of metals, or with his grand physiological arcanum that—"It is possible for a man, *alone*, to create a living child, resembling in every respect those born of women, but much smaller." The directions he gives for doing this, we are sorry to say, could only be told to the initiated.

In many points of view, this prince of the charlatanic art reminds us of the distinguished author (say discoverer) of homœopathy, for with equal ease he appears to have disposed of the learning and wisdom of his predecessors, and to have introduced in their place the ineffable blessing of his own discoveries, which nothing short of the gigantic efforts of his own gigantic mind could possibly have produced.

Paracelsus, although no philologist, and indeed confessing that he hated books so much that he never opened one for ten years, was, nevertheless, a great maker of words, and like his great follower, created several which admit of any kind of interpretation, and not a few that admit of none: of the latter class, behold a cluster, "iliadus, iliaster, idechtram, domor, cagastrum, evester, traranes, dualech," &c. We are not, however, so much surprised at the curious aspect of the vocabulary of this great man, when we remember the way in which he employed it; for, "in extracting an arrow or other weapon from a wound, he recommends (when all other means fail) the use of certain '*verba constellata*,' which will infallibly succeed," and that ordinary language could not effect this, we are all prepared to believe.

Some, however, not understanding the gravity and importance of these mysteries, might think, that the verba constellata would be the cheapest remedy, and might as well have been employed at first, regardless of those common agents with which all are acquainted; not so, however, the initiated, who know well, that if such an unphilosophical mode of proceeding was allowed, the most divine things would become the most common,—the laws of nature would be every day unveiled, and that each man becoming his own "minister et interpres," the priest's office, in the temple of science, would come to an end. Hence, Paracelsus only recommended the employment of the supernatural agency, when the common and tried means were productive of no effect.

Now, the homœopathic medicine, like the *verba constellata*, seems peculiarly well suited for all those cases, where the ordinary modes of proceeding are unattended by the wished-for benefit, and it would seem to us, that the extraction of arrows or bullets would be one of the best modes of trying it. We regret, indeed, that in Mr. Brunel's case, the millionth part of a grain of solid gold was not administered, with a view of fetching out the half-sovereign; for such an homœopathic test must, at once, have declared the infallibility of the system.

Paracelsus was chosen to be professor of medicine and natural philosophy at Basel, in 1526. He commenced his course of lectures by lighting some sulphur in a brazen chafing-dish, and then having thrown into the flame the works of Galen and Avicenna, exclaiming—"Sic vos ardebitis in Gehennâ." In this particular, he appears even to have excelled Hahnemann, who, wanting the laconism of his great prototype, has only disposed of the labours of his predecessors in clumsy and periphrastic books, which, however, from their weight, and their number, have been exceedingly cheap and convenient to the grocers in Paris, and may be seen in their shops even unto this day.

It is said, that Paracelsus was very popular, *because* he lectured partly in German, partly in Latin, his audience, no doubt, understanding some portions of his discourse, and giving him very great credit for those which they did not comprehend; so Hahnemann, writing and talking much unintelligible jargon, seems to have been regarded as wondrous wise, mainly on account of the surprising character of those opinions, to the elevation of which his admirers could not even stretch their imagination. As far as our wish goes, "Quiescat in pace" may be his epitaph: it will soon be that of his system, at least, as far as any practical application of it may be concerned.

Hahnemann, like Mesmer, discovered that even a German prophet is not a prophet in his own country; he, therefore, did well to retire to Paris, where all prophets are appreciated, and all sibyls encouraged.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 20th July, 1843.

IN a former letter I mentioned that M. Colombat had presented to the Academy of Medicine a patient affected with *psellismus balbutiens*, whom he proposed treating by his method: brought a second time before that Assembly, and questioned by several members, it was evident that considerable amelioration had already taken place.

Mr. Perrin, a surgeon in the navy, in a letter to Professor Forget, states that if *phthisis* be incompatible with intermittent fever, as is asserted by a physician of Marseilles, it is equally so with the following diseases,—*dysenteria, hepatitis acutus, encephalitis, scorbutus;* and quotes facts to prove it. Professor Forget, in his answer, says, "It is more than probable that many of the patients would have died from phthisis, had they not fallen victims to the other disorders;" and finishes his letter by advising M. Perrin to ask his Marseilles colleague to suppress his incompatibility, promis-

ing to do so likewise, which would be generous on his side, the difference being four to one.

A pamphlet just published on phthisis, by Dr. Emile Pereyra, is worthy of attention. This distinguished physician was led, after examining a great number of phthisical patients, to conclude that in general the same causes produced *phthisis* and *scrofula*, and was confirmed in his opinion by the discovery of enlarged glandulæ concatenatæ in several cases of the former disease. Consequently he naturally supposed that iodine and its various compounds, especially iodide of potassium, might be employed with advantage, but as soon as he administered them in sufficient quantity to act on the system, the irritation produced was such as to oblige him to cease; burnt sponge was tried, but with no better success. A German periodical having announced that, in Holland, the oil of the liver of cod-fish had been administered in scrofula, he determined upon trying its efficacy. The oil he recommends is of a reddish-brown colour, similar to the tincture of myrrh, transparent, of a fishy smell, and nearly insipid; the dose is a tablespoonful, morning and evening, *in naturâ*. From the 1st August, 1838, to the 1st March, 1841, 362 patients afflicted with phthisis were admitted into the hospital, of these 244 left in a state more or less satisfactory, many completely cured; 110 deaths, but many of these were beyond recovery when brought, and therefore took no oil. From the 1st March, 1841, to the 1st March, 1843,—147 cases, 97 cured (5 took no oil), 43 deaths (18 took no oil). The maximum of deaths took place in February, April, and July; the minimum in March, June, October, November, and December. There were 101 males, of whom 22 were tailors, 17 shoemakers, 14 bakers, and 48 of various professions. Speaking of the symptoms he thus indicates the state of the pulse:—"The four fingers being placed so that the indicator is close to the styloid process of the radius, the other three touching each other, the pulse will be felt principally by the medius. This constitutes the pectoral pulse, and is observed in *bronchitis, pneumonia, pleuritis, phthisis, &c.*, but when there is a sufficient number of tubercles to affect the breathing, the pulse is of a different nature, and is preceded by a slight jerk, as if the blood struck the walls of the artery before circulating through it."

One of the subjects of medical reform mooted at the present moment is, to obtain the abolition of the rank of officers—*Officiers de Sante* (an under degree in medical hierarchy)—and retain but one class, viz., Doctor in Medicine or Surgery. The following fact is a proof of its necessity. M. Cormon, who by his diploma was entitled only to the former degree, though by his talent equalled many who held the latter, was called in to attend a patient in labour; aware that the case would be serious, and that he ought not to perform an operation without the presence of an accoucheur, he requested that one might be called in. Hours, however, slipped away, and at last he perceived that the life of his patient might be forfeited if he did not take upon himself the responsibility of operating alone, by either of the following methods, viz.:—1, *Version;* 2, *Embryotomy:* being convinced of the death of the fœtus, he decided upon the latter as less dangerous for the mother. The operation was successfully performed, and the female soon recovered; but some officious persons circulated the report that the child was not dead when M. Cormon operated. Prosecuted on this account, as having acted contrary to the law regulating his attributions, he was condemned by the tribunal of Dieppe to three months' imprisonment; however, having appealed to the *Cour Royale* of Rouen, he was acquitted.

M. Guillon announced at the last meeting of the Society of Practical Medicine, that he had operated successfully in 5 cases of hydrocele on a new plan. After emptying the tunica vaginalis in the ordinary way, he introduced through the canula of the trocar, an elastic sound, very flexible, and of sufficient length to form several circles in the interior of the tumor, the number of the circles being increased or diminished according to the size of the same. The sound was kept in place by means of a suspensory bandage, until it produced local pain, and slight fever; it was then removed, and the latter alone was employed. The sound was useful, inasmuch as it allowed the serosity to flow freely out, permitted the entry of atmospheric air, and created sufficient inflammation to obliterate the cavity.

The annual meeting of the Scientific Congress will take place next September, at Angers, and it is announced that several important medical questions will be discussed. Among the number are—the abolition of the degree of *Officier de Sante*; the nomination of Boards of Health throughout France, the suppression of all Secret Remedies, the establishment in the principal town of each department of a Permanent Medical Council, whose duty will be to promote whatever is of advantage to the profession. A similar institution exists actually in Piedmont and Plaisance, under the name of *Proto-medicat*, being composed of an equal number of Physicians, Surgeons, and Apothecaries, and whose President has the title of *Proto-physician.* Three meetings are held annually, one for discussing medical, a second surgical, and a third pharmaceutical, subjects. Their office is to controul those who exercise these professions; to prevent their going beyond the limits of that for which they received a diploma; to settle all pecuniary difficulties, &c., to condemn such as may infringe the statutes, in short, to see that every one does his duty as he ought.

M. Maisonabe, in answer to M. J. Guerin, maintains as exact what he advanced in his former letter, and adds, that if an authentic copy of the statistical table, signed by the author, or authors, be given him for three days only, he will clearly prove not only that it is full of errors, but likewise that nothing is more uncommon than to find in it a truth, on which a fact of the slightest moment could be founded.

Academy of Sciences.—Sitting of the 17th July.—M. Buerri de Boismont in a letter to the President, states that if all the physicians of the asylums for the insane, had drawn up statistical tables, similar to those of Messrs. Parchappe, Bouchet, Aubanel, Etoe, Charcellay, &c. the number of patients in France would not be less than 30,000. Speaking of the causes, he says, in 1807, Pinel announced that taking *six hundred and eighty three* patients, *four hundred and sixty four* cases were produced by moral, and only *two hundred and nineteen* by physical causes. M. Esquirol states that out of *two hundred and seventy four* cases, there were *one hundred and sixty seven* from moral, *one hundred and seven* from physical causes. M. Parchappe, out of *three hundred and eighty five* cases, finds *two hundred and forty three* to proceed from moral, *one hundred and forty two* from physical causes. In his own establishment, from the 1st Oct. 1838, out of *three hundred and ten* cases, *one hundred and thirty two* were owing to moral, and *ninety four* to physical causes, the rest unknown, or relative to persons affected with other disorders. M. Guislain states that the number of insane persons in Belgium is 5,105 to a population of 4,105,953 inhabitants, or 1 per 22; but at the same time adds that he considers this, but three-fifths of the total number, on account of its not including those confined in convents, or under the care of their respective families.

Academy of Medicine.—Sitting of the 18th July.—M. Rayer read a report on a memoir, sent by M. Pasquier, Apothecary at Fecamp, on the use internally of sea-water, deprived of the vegetable matter by filtration, and rendered less nauseous by the addition of carbonic acid gas. The conclusions are that sea-water thus prepared may be administered with advantage in those casess requiring purgatives, especially to persons of a scrophulous taint; that the gas fully answers the purpose for which it was added. A bottle of the water thus prepared, acts as powerfully as one of artificial seidlitz water, containing ʒj. of sulphas. sodæ.

GARLAND DE BEAUMONT, D.M.P. B.L.S.
Honorary Physician to the Spanish Embassy.

SEA SICKNESS.—Sea sickness has been relieved by the internal exhibition of table-salt and vinegar.

REVIEWS.

Clinical Remarks on Certain Diseases of the Eye, and on Miscellaneous Subjects, Medical and Surgical, including Gout, Rheumatism, Fistula, Cancer, Hernia, Indigestion, etc. By JOHN CHARLES HALL, M.D., etc., etc. Churchill.

The principal portion of this work having already appeared in the pages of one of our cotemporaries, does away with the necessity for a formal or lengthened review. Our task is consequently limited to an enumeration of the contents, which are tolerably clearly set forth in the ample title page,—and to the expression of our opinion, that although the work was not, in booksellers' phrase, really wanted, that is, there did not exist any previous demand for such a book, still its perusal may prove of interest to the practitioner. It is written with care, and the plans of treatment advised are generally speaking judicious.

The Cause and Treatment of Curvature of the Spine, and Diseases of the Vertebral Column. By E. W. TUSON, F.R.S., Surgeon to the Middlesex Hospital. Churchill.

Mr. Tuson has presented to his readers a practical treatise on the diseases and deviations in shape of the spinal column, illustrated by carefully detailed cases and by engravings, the whole work being well worthy their attention. He commences by a neatly written description of the anatomical configuration of that important part of the system, then proceeds to the consideration of primary and secondary lateral, anterior, and posterior curvature and angular projection, their causes, and treatment, and afterwards describes spina bifida, lumbar or psoas abscess, chronic inflammation of the cancellated structure of the vertebræ, intervertebral substance, or surrounding membrane, and injuries of the spine. He concludes by noticing the operation for the cure of spinal affections, to which he attaches, we observe, a qualified value. It must be confined, he states, to the cases of simple lateral curvature, when the disease is entirely owing to the undue action of muscles. If this rule be attended to as it should, spine muscle cutters will be very rare. The treatment recommended by Mr. Tuson for the various diseases and deformities described by him is sound and judicious, and there is much valuable information contained in his book.

CASE OF DENTAL OPERATION WITHOUT PAIN IN THE MESMERIC STATE.

By J. PRIDEAUX, Esq., Southampton.

"MY first information of the operation of tooth extraction having been performed during that state, and without pain to the patient, was derived from Teste's *Manuel pratique du Magnetisme Animal*, published in Paris in 1840; a work not known in this country so much as it deserves to be. Upon becoming myself a magnetiser, I naturally became desirous of trying an experiment so applicable in my own profession, and an opportunity soon presented itself. A patient I was then in the habit of frequently entrancing, and who when in this state had always shown insensibility to the ordinary tests of feeling, such as pricking, pinching, &c., had a great number of decayed teeth and stumps, from which she suffered so much, without being able to summon resolution to undergo their extraction, as gladly to embrace my proposal of being operated upon in the mesmeric state. During the next magnetic sitting, I took the opportunity of removing two of the most troublesome teeth, and with the

most perfect success. *The patient sat with the hands quietly folded in the lap, the countenance was placid and serene, and the whole attitude that of repose;* in short, not the slightest trace of mental emotion was perceptible, and upon being awakened, it was not till she had examined her mouth that she could credit the reality of her painless release from her tormentors.

"I should have proceeded in the task of extraction on this occasion, but it appeared to me a pity that a phenomenon so interesting in its results to every friend of humanity, from the new era it promised to introduce in operative surgery, and withal so calculated to carry conviction to the minds of sceptics, should be shrouded in comparative privacy (only one friend was present), and I accordingly resolved to defer the extraction of the remainder, and invite a party of medical men to be eye-witnesses of the operation. I took an early opportunity of doing so, and on this occasion extracted two teeth and three stumps from the patient, who, to their great amazement, manifested the same insensibility and indifference to the operation as before.

"I have since extracted from the same patient seven teeth and eight stumps, at three different sittings (making in the whole, eleven teeth and eleven stumps), with equally satisfactory results, and I may remark that the patient being comparatively a young person, no absorption of the alveolar process and gum had taken place, but all the teeth were firmly rooted.

"On the last occasion, five teeth, and two stumps were extracted preparatory to her being supplied with a set of artificial teeth. Several were from the front of the mouth, and as tooth after tooth was extracted, the patient was excessively diverted at the alteration in her appearance; in fact, she could with difficulty controul her laughter; and as soon as the operation was over she called for a looking-glass, and holding it up before her *closed* eyes examined her mouth attentively, drawing back the lips on either side with her fingers to get a better view, and finishing by a hearty fit of laughter at the droll figure she presented with her mouth almost toothless. This sitting was witnessed by a friend of mine, Mr. Henry Goode, B.A. of Pembroke College, Cambridge, who chanced to be spending a few days with me at the time, and who will be happy on all occasions to corroborate the account I have just given, as well as to produce the teeth extracted if required.

"I have extracted single teeth from three other patients during mesmeric sleep, with equally satisfactory results, 'the insensiblity being evidently perfect.' In fact, in two of these cases, the patients were utterly unconscious during their mesmeric state that any operation had been performed on them, being engaged in a conversation on another subject at the time, which suffered no interruption, beyond a slight indistinctness in articulation during the few seconds the instrument was in the mouth.

"A fifth patient on whom I have operated during the mesmeric state, is a young lady who required to have several of her molares separated with a file on account of the commencement of decay, and one stopped. I found her a most troublesome and restless patient, in her natural state, shrinking when the cavity in her tooth was touched, and complaining greatly of the unpleasantness of the sensation of filing. I succeeded in entrancing her at the first trial in about five minutes, and in this state she allowed me to operate *for two hours with the most passive indifference*, assuring me that she felt nothing, except a slight sensation of heat, when the file was used rapidly and continuously for some time together.

"This case is I think interesting and valuable, and affords some evidence in favour of an opinion I brought forward on analogical grounds, in my pamphlet on the Mental Functions, viz.: that there are distinct sets of nerves for feeling and temperature, an idea which you have since informed me suggested itself to Darwin, from seeing a case of paralysis, in which the sense of temperature remained after feeling was lost.

"The subject is certainly one of importance, and I have made several attempts since to 'isolate' these two senses, and in one patient with perfect success. The means I employ are, the application to the skin of a glass stopper heated to a temperature just below what would suffice to raise a blister, to test the sensibility to temperature, and pricking with a common needle, to test that of ordinary sensation, and I possess the power of rendering the patient sensible to the heated stopper and insensible to the needle, or insensible to the heated stopper, and sensible to the pricking, or insensible, or sensible to both, at pleasure.

"I fear that those members of the Medical Society, who were puzzled by the man's low moaning, will be more puzzled by the lady who was fast asleep, and felt not the severest mechanical violence, and yet walked, and talked, and saw. And puzzled they will be till they have studied, as they ought long ago, the history of somnambulism, catalepsy, and the whole of that family of nervous affection. When the ignorance of medical men ceases, the character of innocent patients will no longer be traduced.

ON THE USE OF THE TINCT. IODINI AS AN INJECTION, IN FISTULA ANI.

By CHARLES CLAY, Member of the Royal College of Physicians, London, Lecturer on Medical Jurisprudence, &c. &c. Piccadilly, Manchester.

I FEEL no hesitation in asserting, that in the preparations of iodine (used in injections particularly), we have a much more valuable agent in practice than is generally admitted. The experiments hitherto instituted have fully borne out their utility and proved them deserving of more general application. My attention was the more forcibly drawn to this subject, from the very decided success attending the iodine injection in cases of hydrocele conducted by Mr. Walne of London, a practice I have much pleasure in confirming by the successful treatment of two very obstinate cases of hydrocele, in which every treatment by injection (and otherwise), had previously failed, but which gave way most satisfactorily to the iodine; and though a considerable time has now elapsed, neither case has shewn the slightest tendency to a return of the accumulation. (But one of the most interesting cases in reference to this subject is one of ascites at present under my care, of long standing, of rapid accumulation, requiring frequent tapping, the result of which I hope shortly to lay before the public.) At present, however, I wish to point out the efficacy of iodine as an injection in cases of fistula by giving the result of one recently under my care. In using iodine injections, it is necessary to observe that great care should be taken by the practitioner, to have the iodine pure, and of the proper strength: else all his hopes as to a successful result will be disappointed. For the serous cavities, as in hydrocele, ascites, hydarthrosis, &c., the strength ought not to be more than one drachm of the tinct. iodini, to 10 drachms of water. But in fistula, it may be used much stronger. For the latter, I use the tincture of the full strength, as ordered in the pharmacopœia. The result of the following case fully proves its utility. Mrs. D——t, a lady whom I had been attending for some time in consequence of considerable constitutional derangement, was frequently depressed in her mind. I endeavoured to ascertain if any other circumstance, beyond those already mentioned to me, existed to account for this depression, when she told me she had suffered from fistula ani for seven years, but had not mentioned it to any one before, although it was of so long standing, and which had preyed upon her mind to a serious extent, as it was accompanied with great pain. On submitting to an examination, I found a fistulous opening, highly irritable and discharging freely, about an inch from the anus; the extent of the canal was about two inches to its communication with the rectum. I determined at once on using the iodine injection, and the following day injected the tincture freely through the canal of the fistula; the operation was followed by severe pain for a few minutes, with a less degree of smarting, itching pain, for two or three hours after. On the second day the injections were repeated, the pain following was equally severe with the first day. On the third day the discharge was evidently less; but she desired a little rest, which was granted: after this, she was dressed every other day for seven times, making nine dressings in the whole, when the canal was found perfectly closed throughout, and its mouth entirely healed; no other treatment accompanied, except a little aperient medicine occasionally. Thus a case of the most annoying character, and of seven years' standing (giving rise to much constitutional derangement), was entirely cured in less than three weeks, from the commencement, and up to this time (a space of some months) there is not the slightest appearance of a return of the disease.

To give iodine injections a fair chance of success, they should be well thrown up by a good powerful syringe (made of glass, as the iodine affects the metallic ones), and the operator should be convinced that the fluid reaches the whole length of the canal, which in order to ascertain, he should for the first and the second dressing, wrap a little tow or lint round a bougie, and pass it up the rectum before using the injection, when, if the fluid is conveyed properly, a portion will stain the lint on the bougie. In the case given above, the tincture could not be detected in the rectum after the second dressing. The result of this case was highly satisfactory, and gives room to hope that iodine injections will not only become highly valuable in promoting that peculiar inflammatory action, by which means the relaxed mouths of the exhalents in the serous cavities are effectually obliterated and prevented from pouring out the secretions into those cavities, but also as equally valuable in closing up fistulæ, as in the case just recited. In fistulæ, however, the injection is required to be much stronger. I use the tincture full strength. M. Bonnet, senior surgeon, to the Hotel Dieu (Lyons), has tested to a considerable extent injections of iodine in hydarthrosis, of which he speaks in high terms; indeed, the principle of injecting stimulating fluids into cavities, sacs, and fistulæ (particularly iodine) seems to be assuming a very important branch of surgery, and bids fair to rival some of the fundamental laws of modern practice. In applying this practice to the serous cavities particularly, it is necessary to look carefully at the probable result; *active inflammation will occur* if the preparation used be good, and the strength of the solution sufficient for the pur-

pose; but it is only *the inflammation necessary to a successful issue*: the great secret is to excite a sufficient degree of inflammatory action to accomplish the obliteration required, *but to have it in perfect control*; and, in the serous cavities particularly, not to let it proceed to suppuration, which would certainly defeat the object in view, if not destroy the hopes of recovering entirely.

DR. DICKSON AND DR. LAYCOCK.

To the Editor of the 'Medical Times.'

SIR,—In your last number, I observe a little notice to the following effect—" Vital Periodicity. Dr. Laycock does not claim the discovery of the *idea*, but of the *law* of vital periodicity." Dr. Laycock may " claim" what he pleases; the discovery of the circulation of the blood, the introduction of vaccination, or any thing else—what does it signify what such a person claims? Conscious of his dishonesty, he has resorted to a quibble, which quibble I should not have noticed but for its being reprinted in your pages. A week or two ago, I saw the same thing in the *Lancet*, coupled with some other statements, which any body who has read my writings knows to be false, and interspersed with low language, which respectable physicians do not commonly deal in. Why has this Dr. Laycock left my last letter in the *Med. Times* unansweredd? A field open to *both* of us would not do for his purpose. He is safe while he rails at me in the *Lancet*; he knows that the editor of that periodical will, as he has already done, suppress, or misprint, misquote, or misstate, whatever may not quite suit the interests of his modest contributor. But you, Sir, who have compared my various writings, and the dates of their publication, with what Dr. Laycock first " claimed," then disclaimed, and now claims again, you can tell your readers *who* is the real discoverer, not only of the *idea* but " the *law* of all vital periodicity," who first proposed and proved that law to be in harmony with all natural phenomena, such as the law of storms, tides, and planetary movements, and who, in consequence, had to run the gauntlet of abuse with which, in common with former discoverers, it was his fortune to be assailed.

The periodic portion of the fabric of truth required no elucidation from Dr. Laycock. The building was complete before he entered the arena, with his supererogatory bricks—his "invertebrate and vertebrate animals," his " ovi position and nidification." Dr. Laycock is welcome to amuse himself with the pleasant pastime of *bird-nesting*, more particularly is he welcome to the numerical *mare's nest* with which he has endeavoured to mystify the subject of periodicity. *That* assuredly is his own, but it contains a " blind nut," not the egg he fancies! The real egg of discovery remains with its original finder. Dr. Laycock, by his own admission, had not even the good fortune to see it while yet unbroken, and in the shell.

Neither the *law* nor the *idea* of " vital periodicity," belong to Dr. Laycock.

I am, Sir, yours,
S. DICKSON.

28, Bolton Street, Piccadilly,
24th July, 1843.

USE OF NARCOTICS IN INSANITY.—Opiates are of essential service in those cases of insanity which border closely upon delirium tremens; in cases of puerperal mania; in the first breaking out of an attack of madness, before congestion has taken place; in cases where there is great nervous irritability, from poverty of blood; and in cases of cachexia from starvation, and other causes; they are contra-indicated wherever there is the least sign of general paralysis, or congestion about the head.

WESTMINSTER HOSPITAL.

PARALYSIS FROM LEAD?

While going through Northumberland ward Saturday week last, Mr. White directed the attention of the pupils to an interesting case, that of a man named George Bussi, who was admitted on the 11th of the present month, with symptoms of incarcerated hernia. These symptoms yielded in the course of the next day, and he was retained in the hospital for the treatment of paralysis of the extensors of the hands. The man is 36 years of age, married, and the father of four children. He is thin and pale, of the nervous temperament. He was apprenticed as a glass-cutter, in which employment he was constantly using large quantities of putty, containing much lead. This business however he left ten years since, and, according to his account, he has only once since, and that for a short time, been exposed to the poison of lead: he was engaged about five years ago in what is called dry painting. He has continued, notwithstanding, to wear the same working jacket he then used, which is much stained with paint, and thus consequently the symptoms of poisoning may have been maintained. Paralysis of the hands commenced about twelve years since, but was then unattended with pain in the muscles of the fore-arm, which he now experiences, especially on pressure. He was treated for this at Cheltenham, and recovered in a great measure. Six years afterwards he had an attack of painter's colic, for the removal of which he placed himself under the care of a private practitioner. Within the last three or four years he has had several attacks of paralysis, coming on simultaneously with obstinate constipation of the bowels, at first slight, but each renewed attack appearing with increased severity. Under one of these he is at present labouring, but it is already lessening in degree by the treatment that has been adopted. His bowels are habitually constipated, and previously to his admission, he had been taking cathartics to a large extent, under the direction of a surgeon, but unavailingly. Since his admission his bowels have acted, from the effects of croton oil administered endermically. Anodynes have also been employed. Mr. White drew the attention of his class to the circumstance of the paralysis of the hands always attending on an attack of constipation, and he seemed disposed to regard them as cause and effect. The peculiar bluish-black line on the gums, considered to be clearly indicative of the presence of lead in the system was pointed out to Mr. White, but he did not consider it at all a perfect diagnostic sign, as he said he had seen it in thousands of cases, where there had not been exposure to the lead poison, and where in fact there were not any grounds for such a suspicion. This man is a great snuff taker, and a portion of the snuff he uses is to be analysed, to ascertain whether it contains any red lead, as in the cases recently noticed in the periscopic department of the MEDICAL TIMES, one of which terminated fatally.

EXPERIMENTS ON FROGS.—A frog was inoculated with the blood of a man labouring under farcy; in three other frogs shreds from the stomach of a putrefying corpse were inserted beneath the skin; and under the skin of a fifth reptile a portion of decomposing muscle was placed. Paralysis of the heart and interruption of respiration ensued, with an altered state of the blood and exudation of it through the tissues,—in fact, true scurvy. No immediate effect was perceptible on the nervous system, but it soon became secondarily affected, consequent on the alteration of the fluids.

AN OCCASIONAL PHENOMENON IN PHLEBITIS.

IN a recent number of the *Annales de la Chirurgie*, there is a sensible paper on what the French writers call purulent infection of the constitution, by M. Sedillot, Professor of Military Surgery at Strasbourg. He admits, with M. Tessier, that all the phenomena of this formidable disease may be occasionally present, and yet that no decided traces of inflammation in any vein may be discoverable on dissection; but such an occurrence is, in his opinion, the exceptional, not the general, case. Phlebitis, therefore, is certainly not the invariable and only cause of the cachectic state to which we are alluding. But while he thus objects to the doctrine of M. Blandin when pushed to its full extent, he expresses his decided dissent from M. Tessier's views, that purulent infection is never produced by the direct admixture of purulent matter with the blood, and that it is always attributable to a peculiar alteration of the vital fluid, which gives rise to the formation of abscesses and purulent effusions in different parts, as one of its effects and symptoms.

As we have repeatedly of late adverted to this disputed point in pathology, and in one of our recent numbers gave large extracts from two very able letters addressed to each other by the chiefs on either side of the question, we shall not pursue the subject farther at present, but merely select the following extract from M. Sedillot's paper on a peculiar phenomenon which has been observed in a few cases of phlebitic disease, and which is probably not well known to many of our readers.

" The venerable M. Ribes shewed many years ago (vide his Memoires et Observations d'Anatomie, de Physiologie et de Chirurgie) that an inflamed vein, after having become indurated, painful, nodose, partially filled with pus, and impermeable for some extent to the blood, may recover its healthy condition under a process of resolution, so as again to admit the circulation to pass through its calibre. This remark of M. Ribes has subsequently been confirmed by several pathologists, and its accuracy cannot now be disputed. How are we to explain the phenomenon? Doubtless, in some cases we may believe that an interstitial absorption of the purulent matter has taken place; but in others may we not suppose that the enveloping or surrounding membrane of the abscess within the vein may burst or ulcerate into the adjacent portion of its canal, which has remained permeable to the blood? Why should that which is of daily occurrence in common abscesses—viz. their opening on the side where the resistance is the least—be impossible in the case of venous abscesses? In what other manner too, shall we explain the presence of purulent matter not only in the veins surrounding many abscesses, but extending from these even to the venæ cavæ and the heart itself, except in some such manner as I have hinted at?"—*Med. Chir. Rev. July*, 1843

M. ANDRAL ON THE CARBONIC ACID EXHALED DURING RESPIRATION.

THE conclusions, with which this accomplished *physiological*—not in the sense of the Broussaian School—physician sums up a long memoir which he recently read on the above subject, at the Royal Academy of Medicine, are the following:—

1. The quantity of carbonic acid, exhaled from the lungs in a given space of time, varies with the age, the sex, and the constitution of the individual.

2. In the male, as in the female sex, the quantity is found to vary according to the age, independently of the bulk or weight of the person on whom the experiment is made.

3. At every period of life, between the eighth year and the most advanced age, a marked difference is observed in the quantity of the carbonic acid exhaled in the male, from what is found to be exhaled by the female. It is, *cæteris paribus*, always much more considerable in the former than in the latter. This difference is especially remarkable between the 16th and 40th years of age—a period during which the male very generally exhales almost twice as much as the female.

4. In the male, the quantity exhaled goes on steadily increasing from eight to thirty years of age. This increase is greater at the period of puberty. After the 30th year the proportion exhaled begins to decrease; the amount of decrease becoming more and more considerable in advanced age, so that in the latest period of life, it is nearly about the same as it was in early youth.

5. In the female, the exhalation increases according to the same law as in the male, during the period of childhood. But at the time of puberty, when the menstrual function begins to be developed, the increase—contrary to what occurs in the other sex—is suddenly arrested, and remains stationary (at nearly what it was in infancy), as long as this function continues in its integrity. When it begins to cease, the exhalation of carbonic acid from the lungs increases in a very remarkable degree. As the woman, however, advances to old age, it again decreases, and ultimately it becomes, as in the male sex, very small.

6. During the whole period of pregnancy, the exhalation is for the time increased to what it is usually in woman " parvenues a l'epoque de retour,"

7. In both sexes, and at all periods of life, the amount of the exhalation in proportionally greater in persons of a robust constitution and of a muscular frame. Whenever the energies of the system are reduced from disease or otherwise, the quantity of carbonic acid exhaled from the lungs is found to be diminished.

In conclusion, M. *Andral* remarked that the variations described above do not depend, as one might *á priori* imagine, on differences in the mere capacity of the thorax; although, as a matter of course, they are a good deal influenced by the cause.—*Med. Chir. Rev. July* 1843.

LAW OF SURGEONS' ATTENDANCE.

In the Assessors' Court, Liverpool, on July 24, an action was tried, in which the question to be decided was, whether a surgeon can recover for attendance and medicine in a midwifery case, and its *sequela*, puerperal fever. The plaintiff was Mr. Macintyre, and attended the defendant's wife. The attendance lasted till the death of the patient, which was attribut ed to the shock caused to the constitution by a preternatural delivery. The principal charge was two guineas for attendance at the accouchement, the rest was for medicine and attendance, making altogether twelve guineas. Witnesses were called to prove the attendance and delivery of medicines, and Dr. Nicholson, physician, and Mr. Mac Culloch, surgeon, were called to prove the moderation of the charges. Both were closely cross-examined by Mr. Arnold, to shew that a case of midwifery was not a case of surgery. Dr. Nicholson affirmed that an accouchement was a surgical case—that puerperal fever was a proper subject for a surgeon's attendance, and that all the *sequela*, "if they lasted a life" of a wound, or other surgical malady, were proper subjects for a surgeon's attendance When asked to define the different functions of the "*surgical*" and "the medical man," he sagaciously evaded the query by remarking that the definition would require a treatise. Mr. MacCulloch gave similar evidence, and the Assessor charged the jury to find, first, whether an accouchement was a surgical case—a fact which the evidence, he considered, proved; secondly, whether the medicines charged were strictly auxiliary to the surgery; and, thirdly, whether if so, they were, in their opinion, moderate and proper charges. The jury, after long deliberation, gave a verdict for the plaintiff.—Damages, eight guineas.

A CURIOUS CASE OF THE DESTRUCTION OF A WORM,

(Communicated by W. THOMAS, Esq., M.R.C.S., Pembroke Do.k.)

(To the Editor of the " Medical Times.")

A CHILD who had for some time been suffering from the effect of these worms (teres) by accident, swallowed a metal *eye*,—one of those articles by which, with the addition of the *hook*, females fasten different portions of their dress. The following day it passed off by the bowels, and entangled in it was a worm about 7 inches long. The worm was completely knotted in consequence of having insinuated itself into the different openings of the eye, and which had thus destroyed its life.

WESTMINSTER HOSPITAL.

A Special General Board will be held at this Hospital, on Tuesday, the 1st of August, 1843, at two o'clock precisely, to consider the following Resolutions to be then submitted by Mr. GUTHRIE.

F. J. WILSON,
Secretary.

July 18th. 1843.

1. That the Physicians and Surgeons do visit the In-Patients on such Three alternate Days at least in each Week as they may see fit, and that they do see the Out-Patients on any Two Days in each Week which may be most convenient to them.

2. That the Physician and Surgeon of the Week do visit the Hospital every day.

3. That the Assistant Surgeon and Apothecary do select jointly the In-Patients from those recommended for admission.

4. That whenever any of the Physicians or Surgeons find it necessary to absent themselves for more than a week, they will be pleased to signify the same to the next meeting of the House Committee.

5. That the Senior Surgeon, Mr. WHITE, be at liberty at all times, as heretofore, to desire the Assistant Surgeon to perform such part of his duties as he may see fit.

PERISCOPE OF THE WEEK.

(Medical Gazette; Dr. Gregory's Lectures on the Eruptive Fevers; Lancet; Schmidt's Jahrbucher; London and Edinburgh Medical Journal; Archives de la Medecine Belge.)

STATISTICS OF TWIN CASES. — Dr. Churchill states that we find among British practitioners, in 161,042 cases of labour, 2477 cases of twins, or about 1 in 69, and 36 cases of triplets, or 1 in 4473. Among French practitioners, in 36,570 cases, 332 cases of twins, or about 1 in 110, and 6 of triplets, or 1 in 6,095. Among German practitioners, in 251, 386 cases, 2,967 cases of twins, or about 1 in 84, and 35 of triplets, or about 1 in 7,185. Taking the whole we have 448,998 cases, and 5,776 of twins, or 1 in $77\frac{3}{4}$, and 77 cases of triplets, or 1 in 5,831. The statistics of the British Lying in Hospital, which was instituted in 1749, are not included in this statement. Since the institution of that hospital, 35,978 women have been delivered, and 36,401 children born, Four hundred and twenty-three had twins, and one three boys. The proportion of boys to girls born in that hospital is about 18 to 17; of still-births about 1 in 25; and women having had twins about 1 to 85. The proportional number of women giving birth to twins, appears, according to Dr. Collins' report, to be much greater in Ireland than any other country of Europe from which authentic records have been obtained. In France, he says, there is 1 twin case in every 95 births; in Germany 1 in 80; in England 1 in 92; in Scotland 1 in 95, and in Ireland 1 in every 62. Of 129,172 women delivered in the Lying-in-Hospital of Dublin, 2062 gave birth to twins; 29 of 129,172 produced 3 at a birth, being in the proportion of 1 in 4450. One only gave birth to 4. Of 697 cases of twins collected by Dr. Churchill, 417 children of the 1394 died, or about 1 in $3\frac{1}{2}$, and out of the 12 cases of triplets, *i. e.*, 36 children, 11 were lost, or 1 in 3. A considerable number were premature and still-born, and some putrid at birth.

POST MORTEM APPEARANCES OF SMALL-POX.—The appearances on dissection peculiar to small-pox are confined to those which the larynx and trachea exhibit. The lungs indeed sometimes display the usual evidences of inflammation, vascular engorgement, purulent infiltration, and hepatization. The thorax of one side may be found filled with a sero-purulent fluid (resembling a mixture of cream and water,) the result of acute pleurisy, and the pleura itself may be seen injected with blood, and covered with a dense layer of coagulable lymph; but all this occurs equally in other diseases. The condition of the larynx and trachea, however, in small-pox *on the eighth day*, is unique. The mucous membrane, if then inspected, appears covered with a copious, viscid, puriform secretion, of a grey or brownish color. On detaching this, the membrane itself is seen deeply congested with blood, thickened, pulpy, and in the worst cases black and sloughy, exhaling a most offensive odor. These appearances may be noticed to the third division of the bronchial tubes.

PREVENTION OF HEREDITARY DISEASE.—Mr. Horatio Prater has put forth an Utopian scheme for the prevention of the transmission of hereditary disease from the parent to the child, based on the doctrine, that the human frame is taken down and rebuilt once in every seven years, the processes of destruction and renovation, absorption, and nutrition, being carried on at the same time. He observes that as hereditary diseases seem necessarily to affect the structure of the whole body, no plan of treatment pursued for a period far short of the seven years, can be expected completely to subdue them. The prevention of the transmission of such disease to the offspring is to be effected, by the afflicted individual, whether male or female, adopting for some years, or at all events for one year, previous to marriage, that kind of diet and that plan of life, which has been found to be most conducive to the palliation of his or her complaint. If possible a removal for six or eight years, if not for life, to a climate where the disease is rare or unknown should be effected. If it be the female parent on whose side there is the hereditary taint, the child should be brought up by hand, or by a wet-nurse. Mr. H. Prater thinks the former plan preferable, and he adds as the other secretions of the mother may partake of the same diseased disposition as the milk, it should be a general rule that the child, although, of course, it may be allowed to remain in her

house or apartment, should not be kept for any long period in very intimate contact with her.

Ossification of the Aortic Valves.—Mr. Semple narrates a case of sudden death, with but little previous indisposition, in which, on an examination of the body, the right and left auricle and the right ventricle were found to be perfectly healthy. The mitral valves were thickened by a deposition of semi-cartilaginous substance, the parietes of the left ventricles were very much thickened, but the cavity was of the usual size. The aortic valves were very much diseased, and on looking at them from the aorta, they appeared completely to close up the passage. They seemed to be converted into masses of bone, which almost filled up the valvular orifice, leaving only a small chink for the passage of the blood. These bony masses were rough and nodulated, and were deposited within the sinuses of the valves, and one piece of great size extended from one of the valves down into the cavity of the ventricle. The lining membrane of the aorta also presented a great number of bony plates.

Diabetes Mellitus.—Mr. Hodges of Downpatrick narrates the case of a girl, 17 years of age, labouring under diabetes mellitus, the result of a severe fall, in which he adopted, with apparent success, the nitrogenizing plan of treatment proposed by Dr. Barlow, in the Guy's Hospital reports, and also advised by M. Bouchardat. He prescribed the sesquicarbonate of ammonia in five grain doses every three hours, with coffee and bacon for breakfast, animal food and cruciferous vegetables for dinner, and further directed friction of the skin, and warm flannel clothing. The poor girl who at the date of this prescription was passing 24 pints of urine of the density 1·030, in the day and night, speedily improved: the secretion of urine diminished in four days to fourteen pints, the specific gravity continuing the same. This again fell in a few more days to eight pints, and that soon after to five, still however of the specific gravity 1·030. By the end of the month, the quantity of urine passed was about four pints in the 24 hours,—pulse 80; tongue clean, appetite natural, and the girl said she had never enjoyed such good health. The report about six weeks afterwards was that she had gained strength and color, and considered herself quite recovered. The effect of the nitrogenizing treatment in this case was well marked, and such as to warrant its adoption in other cases. In this instance the density of the urine continued very nearly the same, until the sweet taste had disappeared, when it was reduced to 1·020, and the secretion exhibited the color and smell of healthy urine.

Pre-sternal Bones.—Dr. Knox of Edinburgh discovered the presence of pre-sternal bones in a subject that was brought to his dissecting rooms. Situated behind the sternal attachment of the sterno-mastoid muscles, and mesially in respect to the articular surface for the clavicles, they were attached by their bases to the inner or deeper margin of the notch of the manubrium of the sternum; they were of a pyramidal form, and approached each other slightly at their summits. The base of each appeared to be encrusted with cartilage, and there existed a close but distinct moveable joint, with a synovial apparatus, and strong ligamentous bands of a peculiar reddish color, between them and the sternum; one was less moveable than the other, and a ligamentous band connected them to each other. A few muscular looking fibres, but extremely short, rose from the sternum to these bones. Dr. Knox considers these bones to be rudimentary of some structure more highly developed in some other class of animals. In the same subject, Dr. Knox found a new muscle connecting the liver, diaphragm, and umbilicus together.

Cure of Inveterate Pannus by Inoculation of the Matter of Blenorrhea.—A paper was read before the Medico-Chirurgical Society of Edinburgh by Dr. Hamilton, constructed chiefly from data furnished by Dr. Stout, and gleaned from the practice of Dr. Jäger of Vienna, and Dr. Piringer of Gratz, on the successful treatment of inveterate pannus. By this term 'pannus," is not meant the vascular and thick variety of pterygium, generally so denominated by British writers, but an hypertrophied condition of the sclerotic and corneal conjunctiva, which has been thus described by Dr. Rigler, Jäger's assistant. He divides it into two varieties, *pannus tenuis* and *pannus crassus*, linked by many intermediate forms. The pannus tenuis is moreover defined to be hypertrophy of the sclerotic and corneal conjunctiva, without disease of the sub-mucous tissue; whilst in the pannus crassus, carnosous, or sarcoatous, this sub-mucous tissue is also involved. The leading symptoms of the former variety are the following:—after a long continued inflammatory state of the conjunctiva, numerous delicate vessels extend from the sclerotica, over the margin of the cornea, and expand themselves in the form of a greyish cloudy opacity, giving to the eye a dull and inexpressive appearance. These vessels increase in number, spread over the cornea, to a greater or less extent, usually running from the superior edge of the cornea downwards. The pupil thus becomes partially or entirely covered, and the iris concealed from view. The leading phenomena attending the second variety are an augmentation of those just enumerated. After obstinate inflammation, a thick tumefied net-work of varicose vessels is formed, either primarily in the conjunctiva, or as the sequel of the foregoing variety. In high degrees of development, the metamorphosis covers the whole cornea, giving to its entire surface a brownish-red color, and producing numerous granulations. When the disease has proceeded thus far, neither the iris nor the vessels can be distinguished, and the cornea appears to be involved; if neither nature nor art arrest it, the sclerotic conjunctiva, especially in lax, leuco-phlegmatic habits, becomes covered with a growth of pale red granulations, almost insensible, but easily bleeding, which are so numerous that they sometimes appear confluent, encroaching upon the cornea, until they totally cover it. Their increase separates the lids from the eyeball, sometimes everting them. In this way a simple pannus may be mistaken for a medullary sarcoma; and the more so, as the separation of the brown crusts which form on the surface, frequently occasions considerable hæmorrhage. Experience however proves that in this affection of the conjunctiva, the cornea often participates but little, and in the greater part of its depth remains quite transparent. This condition has been described by English writers, as a granulated state of the eyelids, attended with vascularity and opacity of the cornea

This complaint, if treated early, may perhaps be removed by appropriate treatment; but when it has become inveterate, it has hitherto been found to be irremediable—under these circumstances Dr. Piringer has found inoculating the diseased eye with the matter of blenorrhea a certain cure, the attendant symptoms caused by the remedy not being so severe as might have been anticipated. One hundred and forty-five cases have been treated altogether by Dr. Piringer and Dr. Jäger, of which only seven have proved to be more or less unsuccessful, thus leaving a very large surplus in favour of the proceeding. It must not however be employed unless the pannus affects the whole cornea, as the blenorrheal matter affects very differently the diseased and healthy cornea, risking and injuring the latter, as much as it benefits the former. The most important contra-indication is the existence of any dyscrasia, especially struma, gout, rheumatism, syphilis, etc. The discharge used for exciting the inflammation should be obtained from a mild case of ophthalmia neonatorum. It should be laid not only upon the eyelids, but within them, being directly applied, with a hair pencil upon the conjunctiva, and within the tarsal margins. The inflammatory action should be cautiously produced, and carefully watched. A thick, firm, fleshy, pannus requires, for its dispersion, a higher degree of the sanative inflammation than a thin one less organized, but if the action threatens to be excessive, endangering the eyeball, local depletion, and if necessary, general, together with the usual constitutional remedies, and the local, especially cold or iced water, must be had recourse to. This disease excited in an eye affected with pannus, runs its course much less violently than when an healthy organ is attacked. It frequently leaves the cornea perfectly clear and transparent in the course of ten or fourteen days, although it often requires a longer period, extending, on an average, according to Jäger, to about six weeks. In one of Dr. Piringer's cases, the application of the matter was repeated five times before the pannus was removed.

Cure of Phthisis.—Dr. Calvert Holland narrates the case of a fork grinder, 31 years of age, labouring under the symptoms of phthisis, and reduced to the last stage of emaciation, who recovered, and for thirteen years pursued another occupation. Want, exposure to cold, etc., brought on a renewal of his former train of symptoms, and he died after a few months suffering. On opening the chest, extensive adhesions were found between the upper half of the right lung and the pleura costalis. The lungs did not collapse on opening the chest, and presented a peculiar appearance. Externally, as well as throughout their entire substance, numerous small black gritty bodies were observed, about the size of currants, as well as others, three, four, and five times as large, formed of the same material, and strongly resisting the edge of the scalpel. In the right lung an immense cavity was discovered, occupying nearly one third thereof. An idea of its capacity may be formed from the fact, that the gentleman, whose case it was, after laying it partly open, introduced his fist into it, and even then there was room for an additional body almost one-third the size, before the parietes of the cavity would be on a level with the rest of the lung. The sac was formed of a firm strong semi-cartilaginous membrane, into which no bronchial tubes opened. It contained a small portion of the *debris* of the lung. The ramifications of the bronchi were considerably dilated, and the mucous membrane of the air passages much thickened, but there were not any traces of ulceration. The bronchial glands, at the bifurcation of the trachea, were converted into a hard black gritty substance, about four times the size of a bean. Besides the black bodies found in the lungs there was not any evidence of tubercles. With the exception of a portion of the upper part of the left lung, which was firmer than the liver, the lungs were slightly crepitous, though engorged; and a frothy liquid freely exuded on slicing them. There was not any appearance of pus.

Calculous Diathesis.—M. Cunier has published the particulars of two cases, which

tend to prove the existence of a calculous diathesis. They were both patients for whom he had passed probes in the nasal canal, upon which had formed calculous concretions, consisting of the carbonate of lime, the phosphate of lime, and magnesia, and the chloruret of sodium. The first of these patients had been operated on for calculus vesicæ, and was labouring under that complaint at the time, and the other had two small calculi on the internal surface of the eyelids. Her father was gouty, and a brother died after the operation of lithotrity. Somewhat similar cases have been mentioned by other authors.

New Preparations of Quinine. — Dr. Kingdon, of Exeter, having felt the utility in practice of quinine as a tonic, in cases in which a stimulus to the absorbents also was indicated, has recently succeeded in combining the qualities of these two classes of medicines in an iodide and biniodide of quinia. His iodide of quinine is formed by dissolving equal weights of the disulphate of quinine and iodide of potassium in boiling distilled water, and allowing the mixture to cool, when beautiful fasciculi of needle-shaped crystals are deposited, insoluble in cold water, but soluble in alcohol. The biniodide of quinine is prepared by mixing twice the weight of iodide of potassium with the disulphate of quinine in boiling distilled water, evaporating to one-third in a sand-bath, and allowing the residue to cool, when a resinous substance is deposited of a light straw colour, which, by exposure to the air, becomes darker and of a greenish hue, not crystallisable, sparingly soluble in cold water, soluble in boiling water, readily soluble in alcohol, and then not precipitated when mixed with water. This preparation he has given in several cases of scrofulous enlargement of the glands with very great benefit. In the case of a child, between three and four years of age, when the glands of the neck were in a state of suppuration, half a grain twice a-day was given, and at the end of six weeks the swellings were entirely removed, and the general health much improved.

Tests of Insanity. — The expression of the countenance, the complexion, the colour of the conjunctivæ, and the action of the iris, must all be carefully noted (in insane patients). When you are observing the eye, ask the patient whether he sees motes floating before him; and this may lead him to speak of his illusions or hallucination. When you have exhausted these, ask about his sense of smelling; you may discover, perhaps, that he smells brimstone and fancies himself lost to all eternity. Now inquire whether his taste is altered; then pay attention to the sense of hearing; and, lastly, to that of touch.

Alkalinescence of the Urine.—Dr. Venables, in a communication entitled "Observations on certain sources of fallacy in therapeutics," mentions that a bottle containing half-a-pint of urine was brought to him for examination, and he was informed that it had been found to be highly alcaline, and effervesced strongly on the addition of an acid. The urine had been standing at rest for some days; it was clear and transparent, of the natural color, devoid of smell, unctuous to the touch, deepened the natural blue of litmus paper, but strongly affected turmeric, turning it to a reddish-brown. There was a precipitate of the triple phosphate with a small proportion of the earthy carbonates. The medical practitioner in attendance, to counteract the alcaline condition of the urine, had prescribed the benzoic acid as recommended by Mr. Ure, and after the exhibition of 30 grs, found the urine passed in his presence (which the other had not been) possessing its natural acidulous reaction. From this, conclusions in favour of the action of the benzoic acid in this case would have been drawn, but Dr. Venables' suspicions having been excited, he analysed the fluid for potass, and found it contained an enormous quantity of the carbonate, insomuch that a volume of the undiluted urine treated with a concentrated solution of tartaric acid instantly became a solid mass of crystals of cream of tartar. By a comparative experiment it was found that nearly half an ounce of carbonate of potass was required to raise urine to the specific gravity possessed by the fluid in question, and as no bladder however hardy or callous, could tolerate even for the shortest period, urine so highly loaded with carbonate of potass, nor even endure the injection of water so strongly alcaline, it was evident that the alcali had been surreptitiously added after the urine had been passed from the bladder. Dr. Venables' suspicions were excited on account of the urine, after having stood for four or five days, not presenting any turbidness, alcaline odour, or mucous subsidence, and on account of its high specific gravity, 1·033, which, pathologically considered, could only result from either the presence of sugar or an excess of urea, neither of which was the case. The cause of the adulteration, if we may so term it, did not appear.

Disease of the Lung; History, Symptoms, and some of the Physical Signs, those of Empyema and Pneumothorax. —Under this title, and in illustration of the alleged fallacies of auscultation, Dr. Hughes narrates a highly interesting and rare case, presenting as the heading describes, principally symptoms of empyema with pneumothorax. The patient died somewhat suddenly in a few days after an attack of pleurisy and pneumonia of the other side of the thorax. On raising the sternum, at the post mortem examination, the heart was found to occupy nearly its natural situation. The left pleura and lung exhibited signs of recent inflammation. On the right side the lung was firmly adherent to the costal pleura, except over a small space inferiorly, where there existed only a few old bridles, as not to be detached without tearing away that membrane. The right lung was much contracted; the upper third was of a dark iron grey colour, dense, and without air, except in that contained in some enlarged bronchial tubes. One or two small cavities existed therein, filled with dirty yellow pus, around which the lung was soft, friable, and uneven. The inferior two-thirds of the lung contained a number of cavities of different sizes, in the midst of a dirty grey coloured consolidated pulmonary tissue, quite devoid of air. Among these cavities, as they appeared upon an incision being made into the organ, were some evidently produced by the section of greatly dilated bronchial tubes; others, varying in size from a pea to a pullet's egg, communicated freely and by large openings with the bronchial tubes, but were lined with a soft, loose, flocculent, but not decidedly membranous substance, which alone separated them from the pulmonary tissue. These were generally of a rounded or oval form. One however appeared to differ from all the rest; it was situated about the centre of the organ, rather posteriorly; it was of the superficial extent of the palm of the hand, very shallow, and so close to the surface as to be covered only by the thickened pleura, or at most by an exceedingly thin layer of the tissue of the lung, if indeed any could be proved to exist. Its internal surface was smooth and polished, crossed by thick bands, and was continuous with the lining of the bronchial tubes, several of which communicated with it by large openings. The whole of these cavities were quite empty, excepting those in the upper lobe, which appeared not yet to have opened into the bronchi.

Structure of the Uterus.—M. Jobert is of opinion from his researches that the uterus consists of a single muscle, whose fibres, arranged in super-imposed layers, run in the following directions. 1st. The superficial longitudinal fibres, which may be called *median*, as they occupy the central raphe of the body of the uterus, rarely exist on its anterior surface; they are constantly found on its posterior aspect, where they consist of two thin superimposed layers, commencing at the fundus of the uterus, and running to the uterine extremity of the vagina, to which they are attached, with the exception of a few which terminate on the neck of the uterus above the opening of the vagina. They adhere on the one hand to the peritoneum, on the other to the oblique fibres. 2nd. The superficial fibres of the anterior wall of the uterus form a layer covered by the peritoneum, and lying on the deep fibres; they are so disposed that they do not embrace the entire surface of the wall of the uterus which they concur in forming, but they cross before they reach the round ligament of the opposite side. Some of its fibres enter into the composition of the round ligament, while others pass behind it, and terminate on the sides of the organ where they decussate with those from the posterior surface. 3rd. The remaining superficial fibres appertain to the tubes and to the ligaments of the ovaries; they are only apparent during pregnancy. Some arise from the fundus of the uterus, adhere to those which belong to the tubes, and run to the anterior parts of the ligament of the ovaries, being slightly twisted on themselves; others, more numerous, at first divergent, arise from the posterior surface of the fundus of the uterus, and also run to the ligament of the ovary. Finally, some transverse fibres, arising from the posterior surface, constitute the inferior portion of the organ. The neck of the uterus is composed of the same tissue as the body, the fibres composing it represent semicircles, and decussate without intermixing in the direction of the commissures. This semi-annular arrangement is more evident when the female has borne children, and when the orifice of the uterus is transverse.

Poisoning by Arsenic.—M. Bouillet, was called to a woman 32 years of age, who had taken about six scruples of arsenious acid. Emesis was freely induced, and afterwards ferruginous preparations were administered, followed by diuretics, upon which reliance seems to have been principally placed. The symptoms of poisoning did not shew themselves in an intense form until three days after the commencement of the treatment, when they became very severe, and continually increased until the death of the patient on the 6th day.—Diuresis was not induced, the poor woman not passing above six ounces of urine in the six days.

Treatment of Gonorrhea.—A correspondent of the Lancet, recommends an injection composed of half-a-drachm of the *liquor plumbi acetatis*, two drachms of *vinum opii*, and two ounces and a half of the *aqua flor. aurant.* to be used every four or six hours, the glans penis being constantly kept wet with it, and the bowels opened once or twice a day with a saline aperient. He has thus cured fourteen cases successfully. The scalding may be relieved by the sesquicarbonate of soda or liquor potassæ.

Placentar Presentation.—In some cases of profuse and alarming flooding from complete placentar presentation, where the os uteri is so

bhick, rigid, and undilatable, that it is impossible to introduce the hand into the uterus, without producing certain mischief, Dr. Lee has found that delivery may be safely accomplished by merely passing the hand into the vagina, and afterwards the fore and middle fingers between the uterus and detached portion of the placenta, grasping with them the feet, which are generally situate near the os uteri, drawing down the inferior extremities into the vagina, and delivering. In this way the inferior extremities may often be brought down, when it is impossible to pass the whole hand through the os uteri.

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of Gentlemen admitted Members on Friday, July 21st, 1843:—

T. Cattell, J. C. Harper, G. M. Henning, H. F. Williams, P. P. Ransom, T. L. Philipps, A. Markwick, R. D. Walker, J. L. Milton.

ADVERTISEMENTS.

London: Printed and Published by JAMES ANGERSTEIN CARFRAE 49, Essex Street, Strand, in the Parish of St. Clement Danes Westminster, in the County of Middlesex,—July 29, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 202. Vol. VIII. LONDON, SATURDAY, AUGUST 5, 1843. PRICE FOURPENCE. Stamped Edition 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper, and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per Half-year, Post-free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE VII.

Mechanism of Animal Respiration.—Analysis and microscopical anatomy present the readiest means for reducing to a general formula the comparative anatomy of the mechanism of the respiratory function. We may in this manner arrive, as by a synoptical table, at the conviction that, in all animals, respiration takes place in an identical manner, as far as its essentials are concerned, and that it differs, from one class to another, but in the diversity of the accessory apparatus which form the seat of respiration. The fundamental principle of this mechanism, as we have already shown, is that every surface which aspires or absorbs, seems to be attracted by the surrounding fluid, which contributes to this aspiration and absorption; that, in the action, on the contrary, of expiration and of exudation, the surface seems to be pressed backwards by the circumambient fluid. Now, suppose that the respiratory surface line the interior of some hollow organ, which communicates with the exterior, by means of an orifice or open tube; it is evident that the respiratory surface will assimilate to itself, will aspire and absorb the assimilable molecules of the fluid which fills the capacity of the vesicular organ; this will seem to contract upon itself, since each molecule of the respiratory surface will be attracted towards the centre of the vesicle, in the direction of its radius. The capacity of this vesicle will thus become narrowed, the air which is contained in it will be expelled by the orifice which communicates with the external atmosphere. The organised molecule will then aspire, at the same instant that the anatomically respiratory organ expires; a fact which seems contradictory at first sight. While, on the contrary, the organised molecule shall expel from its interior the fluids which it is not capable of assimilating, the lung will become dilated; its capacity augmenting, the external air will become drawn in. The lung will then aspire, at the same time that the organised molecules of its surface shall expire. By describing the two alternate movements of the lung, by the names *inspiration*, (movements from without inwards) and of *respiration*, (movements from within outwards) and preserving to the alternate movements produced by the elaboration of the organised molecules, the denominations of *aspiration* and of *expiration*, we should then say that the *aspirations* coincide with the *respirations*, and the *expirations* with the *inspirations*. But, for the organ to continue this alternation of functions, it is necessary that the lung should remain, during *respiration*, always distended to a certain degree by the residue of the inspired air; for, otherwise, considering the force of agglutination of the organised molecules, the respiratory surfaces, becoming approximated by reason of the vacuum, effected as a result of their aspiration, would be so closely drawn together as to render it impossible for them again to be separated, and thus to co-operate towards the movement of dilatation and inhalation of air, which should serve towards a new aspiration. Suppose, in fact, that the lung should have expelled by the act of expiration all the air which it had received, from that moment it would lose all aptitude for the function of aspiration. For the respiratory cells have the property of absorbing the air which covers them, only at the moment of their aspiration. But if they are not surrounded and encompassed by this atmosphere, what then can they absorb? If they are surrounded by an empty space, there can be nothing capable of absorption within their reach.

Respiration, whether *branchial* or pulmonary, has then no need for its performance of any other apparatus than its proper structure; and all the lengthy dissertations which have been written to prove that the muscular apparatus contributes to the act of respiration, give way before this simple and microscopical idea. We must then admit that, in the act of inspiration, all the muscles which are set in action are moved but in a passive manner; and that, if they contract during the period of respiration (formerly called *expiration.*) it is rather, as it were, to regain their original volume, than from any special activity. In fact, every muscle is passive while it becomes dilated, it is active only in its contraction. When the diaphragm pushes downwards the stomach and intestines, it is in consequence of its being itself forced in that direction by the pulmonary dilatation; as soon as this dilatation ceases to press upon its upper surface, the distended muscular fibres regain their original volume, and this action thus undoubtedly becomes an auxiliary, though not the immediate cause of expiration. The same reasoning must be applied to the intercostal muscles; it is not in consequence of their contractions that the ribs become elevated from their normal obliquity, and thus augment the capacity of the thorax. We have merely to apply the finger upon one of these muscles, during *inspiration*, to become convinced of their passiveness in this act. Moreover, if all these muscles were to contract in raising the ribs, they would produce just an opposite effect: they would draw them closer together, or else they would probably produce no effect at all; for while raising the inferior rib, the muscle would tend to lower the superior one; its action would be divided in two opposing directions. It is, on the contrary, during expiration of the lung, that contraction takes place in the intercostal muscles, and it is at this stage that the ribs become approximated. When they are separated during their elevation, they yield to the pulmonary dilatation. But if the intercostal muscles become contracted as an effect of rheumatism, and if to this abnormal contraction be added that of the pectoral muscles, or of the various muscles of the back, and even that of the diaphragm, the chest is in consequence oppressed, but respiration is not interrupted; the intervals of aspiration and of expiration are shorter, these two acts are drawn closer together; respiration, in fine, becomes irregular, but asphyxia does not immediately result.

It might be objected to this explanation that the animal becomes asphyxiated immediately on opening the thorax. But in this objection, two circumstances are confounded together, which, nevertheless, have a very distinct signification. It is not from the absence of the lever or moving power of the intercostal muscles that the lungs remain collapsed and cease to aspire; it is in consequence of the introduction of the exterior air into a cavity which was closed against it; it is in consequence of the action, upon the serous membranes, of a fluid which is only capable of elaboration by the mucous surfaces. It is as much the effect of a traumatic poisoning, as a consequence of the weight of the air. The pleural surface of the lung becomes dry and contracted; the capillaries of this surface are exposed to the air which they were not organized to elaborate. There is a disturbance produced, a spasm in the revolutionized region. More than that, the atmospheric column, pressing with all its weight upon the surface of the lung, does not find, in the inspired air, a sufficient volume to produce its equilibrium; the muscular unity being destroyed upon so large a scale, aspiration nowhere meets with auxiliaries, but encounters obstacles on all sides. The internal walls of the lung will then of necessity be forcibly drawn together and agglutinated, as would be the case with two aspiring cells which might be brought into contact, without the intervention of an interposed layer of air or of water. From that moment, they would become intimately united. Another circumstance, too, that contributes to this collapsing of the lungs upon themselves, is the sudden revolution that takes place in the focus or centre of expiration of each organized molecule; in fact, the expiratory faculty is suddenly transferred to the pleural surface, which is placed in contact with the external air, by the solution of continuity effected in the thorax; while exhalation, which is inseparable from expiration, takes place in this cavity to a large amount. The lung then remains permanently collapsed, since its internal cells, though they may aspire to a certain extent, have ceased to expire, while those cells, which have now become external, expire and necessarily push back the tissues towards the centre of the pulmonary organ. Expiration by this new method concurs, then, with the original mode of aspiration towards the production of asphyxia.

From this moment, the circulation becomes interfered with to a greater or less degree, and may be felt distinctly to oscillate under the finger. For the pulmonary organ is the primary mover of the circulation; the blood is drawn forwards, by the vacuum created in the *afferent* branch of the respiratory capillaries, at the moment that the surface of these small vessels is in the act of aspiring, since the vascular tube must then be dilated; it is forced onwards towards the *deferent* branch of the same vessels, during the act of expiration which contracts and narrows the capacity of the vessel. Thus, when the internal tunics of the veins and arteries are no longer endowed with that property of aspiration and of expiration on which the nutrition of the organs depends, the function of the respiratory organ alone will suffice to put into motion, and to keep up the phenomenon of the circulation of the blood, in all those parts to which the vascular net-work extends itself. The heart is but a vascular dilatation of large dimensions; it is a reservoir or resting-place to the general circulation, and not its source or point of departure. It contributes on its part, but only on the same principle as the expiring and aspiring surfaces of the veins and the arteries, to that incessant movement which is the sign of life. But, abandoned to itself, the vascular system would be unable to keep up the motion of the liquid, if the lung should remain asphyxiated. For the blood being no longer able to undergo that transformation in the lungs which fits it for the nutrition of our organs, it loses the property which renders it capable of being aspired by the tissues. Now, without aspiration, expiration must cease; elaboration cannot take place unless aspiration continue; and in the absence of both aspiration and expiration, all movement must cease in the solids as well as in the liquids; this suspension of movement constitutes death.

But if in its turn the circulation suffers in any, even the most remote, branch of the vascular net-work, the blood, which reaches the lung, is rendered less and less fit to undergo the pulmonary transformation, which we have called *hematisa-*

tion; and, in consequence, the respiratory organ, the vesicles of which are nourished by this blood and maintained in their normal state by reason of this nutrition, the respiratory organ, I say, becomes secondarily affected; its alternate movements of inspiration and respiration become in some cases accelerated, in others slackened; the source of the circulation is poisoned by the fluid carried to it by its innumerable canals; the active principle of the circulation becomes passive, as the most remote and most simple of its branches. How beautiful is this unity of the organization, in which we have neither beginning nor end! In which every molecule, however small, is by turns the *alpha* and *omega*, the producer and the product! For the organs of each individual live but by exchanges, which they give and which they receive from each other. The regularity of these exchanges, constitutes harmony; harmony—life.

The capacity of the pulmonary organ necessarily varies according to the species and according to the individual; thus we cannot admit, for the volume of air contained in the lungs, an uniform proportion. But the quantity of air inspired and respired, during a given time, varies not only according to the individual, but also according to the state of tranquillity or of agitation, in which the individual is placed, at the moment of observation. The most simple experiment will demonstrate this point. If we attempt to count the number of inspirations in the minute, we shall perceive in a short time that, under the excitement thus occasioned in the mind, the inspirations will become more and more frequent; with how much greater reason, then, must this occur during a fit of anger, when running, during an animated conversation, or as the effect of sudden febrile excitement. Still, we may admit as a mean calculation that, in the human species at the adult age, the lungs habitually contain at least three *litres* and a half of air. The lungs never empty themselves entirely of the air; they renew it but partially; if they were to become perfectly empty in the act of *respiration*, they would from that moment lose the power of filling themselves again, by means of *inspiration*; the respiratory cells would become inseparably joined together, unless their sides were held apart by an interposed layer of air.

The air contained in our lungs is renewed, in the proportion of a half *litre*, at each inspiration. Now, on a mean calculation, allowing fifteen inspirations to the minute, it follows that the volume or quantity of air elaborated by our lungs, in the course of an hour, is about four *hectolitres* and a half; and in the twenty-four hours, one hundred and eight *hectolitres*, that is to say a volume of air filling a space of more than four and a half cubic *metres*. We must not, however, conclude, that on imprisoning an individual in a space containing four and a half *metres* of air, hermetically closed, he could live with impunity for twenty-four hours. It is evident, in fact, that the air, when thus enclosed, quickly becomes altered by the products of expiration, and that it loses that purity which is required for the function of aspiration. For each expiration would vitiate a quantity of air equal to 1-21800th of the total volume which the individual would have to respire during the twenty-four hours. Now, supposing that this fraction shall be spread in an uniform manner throughout this limited atmosphere, it will follow that at the first inspiration, the aspiration will suffer or be deprived of 1-21800th of its function; and this deprivation or derangement progressing, if I may so express myself, in a geometrical manner, at the same time that the vitiation resulting from expiration shall proceed but in a simple or arithmetical proportion, a very short time will elapse before the disorder of the individual will be shewn by pathological signs of a progressively grave import.

These preliminary notions will, I think, enable us to understand the mechanism of respiration. We shall now pass to the enumeration of the various kinds of asphyxia, properly so called, that is to say by deprivation of respirable air; reserving for separate consideration, the examination of those gaseous causes which affect the lung by a species of intoxication. Asphyxia may take place, either by some meteorological obstacle which results from a change or modification induced in the constitution or the composition of the air; or from some mechanical obstacle, that is to say, by interception of the passage which allows the air to reach our lungs. This mechanical obstacle may arise, either by occlusion, when a foreign body is accidentally introduced into the air-passages; by muscular spasm, which suspends the alternate expansion and contraction of the parts, and keeps them either constantly open or constantly closed; or by compression exercised in various ways upon the air passages. We shall treat of these different modes of asphyxia, under as many distinct heads or divisions.

Meteorological Asphyxia.—1*st. Asphyxia produced by vacuum.*—Any subtraction from the quantity of atmospheric air which, during a given period, the respiratory organ is accustomed to respire, becomes the commencement of a vacuum; the organised being is immediately seized with an uneasiness, which increases in proportion to the volume of air abstracted, and to the length of time during which this modification is continued in the constitution of the surrounding fluid. This effect is relative to, or rather dependant on, the structure and habitual state of the respiratory organ. The rarefaction of the air in which the inhabitants of the mountains live, acts as the commencement of a vacuum upon those who reside in the plains; and the more we advance towards the summits, the more does this influence increase in intensity; for the more the air becomes rarefied, the greater is the deficiency created in the quantity of air which our lungs have been in the habit of respiring. Before this uneasiness can cease, it is necessary that the lungs should become progressively inured to this new atmospheric constitution. Now, the air being condensed towards the poles of the earth, and rarefied towards the equator, it results that by following the meridian, the emigrant will experience an effect analogous to that caused by ascending a mountain; but this effect is less sensible by reason of the length of the voyage, which permits the lungs to habituate themselves day by day to these insensible modifications in the meteorological state of the surrounding medium. If man were carried suddenly from the climate of the north to the torrid zone, he would be asphyxiated in a few days, perhaps, even in a few hours.

The disturbance in the respiratory function progresses in a geometrical proportion, while the subtraction of the respirable air may proceed but arithmetically. Hence it happens, that asphyxia will be accomplished long before the vacuum is complete. Experiments upon animals placed under the exhausting bell of an air-pump, sufficiently demonstrate this point. At the first stroke of the piston, the animal becomes uneasy, and tries to avoid the danger; at the second, it becomes frightened, it struggles against this obstacle to its life; it gapes, to supply the inefficiency of its inspirations; it becomes agitated—it trembles—it falls; it pants, to endeavour to make up, by the number of its inspirations, for that which is deficient in their depth; it raises itself up again; the rat stands up on its hind legs, as if to seek the air which is wanting to it in the upper part of the glass, but tumbles down again, as if struck by lightning, for, in the upper portion, there is still less respirable air; the bird flaps its wings, and this movement, which raises it under natural circumstances, now keeps it closer upon the level on which it lies: it is now seized with tetanic convulsions. If, at this moment, you introduce air beneath the bell, you will restore it to life; an instant later, and this would be beyond your power, for life would be irrevocably extinct: the lungs being more or less exhausted of the quantity of respirable air, which preserved in the economy a remnant of existence, would have lost, without return, their capability of respiring; for, as I have said before, they can only draw in the external air, by help of the air which covers their surfaces. After death, we find the lungs gorged with blood of a black colour, for want of the oxygen which gives it its natural tint,*—thick and coagulated, from the absence of that quantity of water which is subtracted from it by each stroke of the piston. The heart, that grand reservoir of the circulation, and of the pulmonary elaboration, is distended by clots of blood, to a greater degree in the left than in the right ventricle. The skin is injected, for the vacuum, on the principle of a cupping-glass, has drawn the blood towards the superficial capillaries. The brain is congested. The stomach, during the last moments of life, endeavours in vain to reject its contents by vomiting; while the hardened excrements are carried towards the anus, which is closed against them; every liquid is drawn towards the surface by the readiest and the shortest way, however long may be its dimensions in themselves; and if the corpse be afterwards left in dry air, it takes a longer time to decompose, because its tissues have been deprived, both of the quantity of air, and of the quantity of water, which are the necessary vehicles of every species of fermentation.

* May not the respective coloration of the arterial and of the venous blood, be owing to the predominance of an acid (carbonic acid?) in the arterial blood, and to that of an alkali in the venous blood? The venous blood will thus be but arterial blood, deprived, by the elaboration of the tissues, of the acidity with which it is impregnated by the pulmonary respiration. These acid or alkaline vehicles become appreciable to our reagents only when in excess, and not when contained in their just or equable proportions.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

We were, at the conclusion of the last lecture, adverting to the subject of chronic pleurisy—to the effects of pleurisy in its chronic form; we were investigating the pathology of this disease, and we found that it tended to two classes of results—those in which, by the absorption of the fluid, the chest became contracted, and serious displacements of the various organs took place in consequence of the partial obliteration or collapsing of the cavity of the chest; these formed one class; and the other class was that in which the liquid effusion predominates, and is only to be removed by some artificial means, or at least constituting a permanent disease. I also described the phenomena caused by the contracted state of the chest, and the various curious pathological conditions which it induces, and I showed that the reduction of the breathing apparatus, sometimes to one-half the natural condition, is accompanied by consolidation of the texture, and that this, with the displacement of the organs and the frequent obstruction of the vessels in the contracted parts, usually lays the foundation of serious disease, or gives a pre-disposition to various other affections. Since I last met you, I have had two cases illustrating this very forcibly, cases in which the physical signs readily assured me, at the commencement, of the existence of pleurisy. In a little time, the chest symptoms, which had never entirely subsided, became more active, and phthisis manifested itself. These cases occur not uncommonly—cases of contracted chest resulting from pleurisy, with a tendency to still further disease, chiefly phthisis. Sometimes dropsical and other affections ensue, as a common result of pleurisy.

As we are now on the subject of the pathology of this disease, we will first consider the nature and condition of the chest. The reason why the liquid effusion is not absorbed, after the first acute inflammatory attack subsides, may be either owing to the continuance of the inflammation, keeping up the discharge, or to the altered condition of the pleura itself, and because of the over-quantity of lymph, which is sometimes of a shreddy character and incapable of absorption. The liquid is sometimes merely serum, which is rendered turbid by flakes of lymph; but sometimes the liquid is actually purulent, having globules of pus mixed with it. There is a mechanical difficulty to the absorption of the lymph, though it is not to be supposed that that mechanical difficulty is in-

surmountable. Sometimes, on the continued persistence of the liquid effusion, there may be some alteration in the structure of the parts. When the heart becomes adherent, as it not unfrequently does, an impediment is afforded to the circulation. This seems to be the condition in which liquid effusion is apt to predominate—a sort of hydro-thorax becoming engrafted on the pleurisy. In these cases, we most commonly find pus mixed with a quantity of shreddy matter. This is the liquid usually found in empyema, which is, generally speaking, a very incurable kind of disease. The symptoms of the chronic form of pleurisy, especially of this kind, are often very obscure. Sometimes there are the smothered remains of the acute disease—the symptoms all softened down—reduced but not removed; the fever has subsided in a great measure, but there is often a hectic fever left, coming on in exacerbations; heat of skin, with perspiration; the pulse usually maintaining its frequency, although it may have lost much of its sharpness; the inflammatory character has subsided, but still there is sometimes irritation and pain, though usually much reduced. There is rarely anything like sharp or severe pain in chronic pleurisy, but there is often a considerable amount of soreness and tenderness; and from the abdomen upwards, and in the intercostal spaces, there are, in the majority of cases, some symptoms approaching to inflammation. The pulse is usually accelerated, and sometimes there is a constant dryness of skin. The presence of cough is uncertain, and I have heard of large amounts of liquid effusion in the chest, without there being any cough at all. The breath is short, and often rendered frequent on exertion; the patient cannot take much exercise, but appears as if overpowered by weakness. There are a great number of respirations in the minute, as in an individual greatly weakened by illness. Occasionally, there is some œdema on the surface: this is, I believe, usually confined to those cases where the pleura costalis becomes perforated, and the contents of the chest are infiltrated into the cellular texture. Œdema, under these circumstances, is an unfavourable sign. I have met with it in several instances, and in those instances there has been perforation. It is a bad sign. Besides these symptoms of disease, the patient sometimes has a great amount of hectic fever and weakness, with profuse perspiration, and other symptoms exhibiting a state of asthenia. These symptoms are manifested where a great amount of pus is contained in the pleura. In some cases of chronic pleurisy, we find the breath short, but yet the patient keeps up his colour, and is not so much inconvenienced, and you may judge here that the liquid effusion is serous. You may bring the matter to a test by a simple operation; by using the needle, the liquid may be drawn out, and you may ascertain in this way whether the liquid is purulent or not

Now, with regard to the treatment; the great object is to remove the inflammation, if possible, by active treatment, which in the acute stage is usually successful; but if you find the constitution of a cachectic character and predisposed to chronic inflammation, and if, in consequence of this, the signs continue undiminished after two or three weeks, then it is to be considered that the disease has assumed a chronic character, and we must no longer persevere with the active antiphlogistic treatment. The increasing pallor and the weakness of the pulse will usually warn us not to proceed in that course alone: under these circumstances, it is usually necessary to allow a better diet, to allow the patient a moderate quantity of animal food, or at least not to stint him in a milky and farinaceous diet. The external treatment to be adopted, consists chiefly in counter-irritation, as a succession of large blisters; local depletion may sometimes be used, but this should be reserved more for the recurrence of pain or excessive tenderness in any particular part, than for any existing symptoms. It is not desirable to lose more blood in this state than can be avoided, and the means to be used should consist in counter-irritation by the free use of tartar emetic ointment. There is another antiphlogistic remedy, and that is mercury, which is useful in the chronic form of pleurisy; but in the acute stage, there is less expectation of good to arise from this treatment. The lividity of the countenance sometimes is a strong symptom of this disease: there is a hectic flush on the cheeks; and in such cases, where the pulse has not greatly lost its strength, and the general functions are not much depressed, the use of mercury is highly advantageous. Blue pill, squills, and digitalis are useful. In the reverse cases, the best remedy, as far as we know that remedies are of any use, is iodide of potassium, sometimes combined with iodide of iron, still using the external blistering. I have seen patients recover from this treatment, who were deemed almost beyond hope. It is principally in children that we find these unexpected recoveries occur. But there are cases where effusion will predominate, in spite of all we can do, and the patient sinks from the accumulation of liquid, which causes suffocation by pressing on the lung; in other cases, it does not cause death by asphyxia, but a general disturbance of the whole organs results, which ultimately proves fatal by its continuance. Now, under these circumstances, the object is to remove the fluid. The fluid, either from its quantity oppresses the lungs or organs of respiration, or else from its quantity and quality extends and promotes structural lesions within the chest. The operation for the removal of this is called *paracentesis*. There are some cases of pleurisy in which the quantity of liquid has produced suffocation and death, but these are rare cases. There are others in which, after the acute symptoms have been overcome, the patient remains in a state of weakness, and does not rally; the pulse does not regain its ordinary strength, and the various cachectic symptoms continue day after day, week after week—the patient begins to sink and lose his colour, the functions are gradually disordered, and there is complete mechanical mischief gradually undermining the health. The object is to let out the fluid: we cannot let it out entirely, but we can so much diminish its quantity, that the natural functions may go on without serious interruption. Letting out a portion of the fluid has effected not only the absorption of the rest, but has changed the condition of that which remained: a relief is given to the vessels and to the compressed lung, by the removal of a certain quantity of liquid, enabling the vessels to absorb away the remainder. The spot to be tapped is to be determined by the physical signs, as well as by the anatomical considerations in relation to the parts. It is highly important to avoid tapping in any situation where there is any vital organ, or where the great organs of the chest approach to the surface,—where the lung comes near the surface, or the heart. Dullness on percussion is a sign, more or less, of liquid effusion; this may be an indication for the use of the trocar. Where the liquid effusion takes place on the right side, it pushes the lung away, leaving plenty of space, with perfect dullness from about the third or fourth rib down to the very limits of the chest. But it is desirable not to come near the confines of the heart. Some situation between the fourth and seventh rib is usually the best for the operation on the right side, and the same thing applies with regard to the left side, taking care to avoid the particular situation of the heart. The position, however, must be modified by the circumstances of the case: you must listen to the chest, not only to ascertain whether there is any dullness on percussion, but to see that there is no transmission of the voice on these spots. If the voice is transmitted, there may be a pillar of lung adhering to that spot; and, under these circumstances, though perfect dullness may exist on percussion, there will be the sound of respiration transmitted, and the presence of the respiratory murmur should warn us against the use of the trocar on that spot. The fear is, of perforating the lung, which may be partially adherent to the chest; and, on the other hand, of perforating the liver, which may not be entirely depressed. It happens sometimes that the liver may be situated lower down, in the iliac region, and sometimes higher up. The fluctuation of the intercostal spaces furnishes an additional criterion. You must take all these signs into consideration, in introducing the trocar. Coming again to the left side of the chest, the organs to be guarded against are still the lungs, which may be adherent, and the heart, which, however, is generally displaced by extensive liquid effusion at the left side, and thus becomes a physical sign; in these cases, perforation may be made with safety in the region where the heart usually beats. This can be done only in those cases, where we find the heart has distinctly shifted its position to the right of the sternum. Usually, it is safer to go lower down towards the mamilla, sometimes between the fourth and seventh ribs. It is desirable, again, not to go too low; in the first place, the stomach may not be displaced to any considerable degree; and the diaphragm may rise high up in the chest, and not be much displaced by the fluid, and there is fear of perforating the diaphragm and the stomach. Accidents of this kind have happened. Then, again, there is fear of perforating the heart; liquid effusion may take place, and the heart not be pushed over to the opposite side; instead of being pushed over, it is forced somewhat backwards: the liquid effusions spread to a considerable extent all around it, but it is not entirely displaced; under these circumstances, the trocar introduced in any of these situations, may possibly reach the heart. It is necessary to use great caution. To avoid perforation of the heart, it may, in some circumstances, be important to select a spot higher up, nearer the axilla, or sometimes to thrust the trocar through the pectoral muscle high up in the chest. Another criterion is derived from using the exploring needle beforehand, to ascertain the actual presence of liquid in that spot. You must not, however, suppose you are perfectly safe in doing this, for it is very possible to have the lung approaching the surface, and yet pus shall come out when the needle is put in. The trocar may reach further than the exploring needle, and would thus do a greater amount of damage. Generallyspeaking, the situation that is best may be said to be between the fourth and seventh ribs; and more usually about the fifth or sixth rib is, on the whole, the best spot for avoiding the heart. You have to avoid the chance of injuring the intercostal arteries, and, as I said before, it is desirable to pass the trocar obliquely upwards. The object of the operation is not merely to evacuate the fluid, but likewise to promote the expansion of the lung; and, therefore, it is a material indication in the performance of this operation to avoid the introduction of air. I have given precise directions, in several instances, with this view; and because I have not stated the grounds of my reasons for this precaution, it has been supposed in some quarters that they are speculative reasons. But they are not so; I had seen the operation performed, it may be eight or ten times, in a manner to be deprecated; and it was in consequence of the bad success of the operation, that I was led to the examination of this matter more fully, with a view of finding out what were the causes of the failure. I have seen the operation performed, in many cases, without the introduction of air. It is advantageous to allow the trocar to remain in, in order to let the fluid run out completely: the effect of this is, to leave the lung exactly in the same condition in which it was before the effusion took place. But, when air is admitted into the cavity of the chest, or the pleura, we have a substance that this cavity is wholly unfitted for. The presence of air itself in the body, independently of effusion, tends to produce powerful irritation. The air passing in, comes in contact with a liquid, which is susceptible of decomposition, and it becomes highly fœtid, discharging a great quantity of hydrogen gas, independently of the disturbance which it causes in the whole system. Under these circumstances, night sweats come on, with diarrhœa, the pulse becomes thready, there is heat of skin, more and more pain, sometimes the tongue becomes brown and dry, or at any rate, covered with a coat of a peculiar character. I have seen patients, under such circumstances, sink within periods varying from a week to three weeks after the operation. The symptoms at first are those of considerable improvement, the pain is altogether relieved, and there may be nothing felt for a time; but the

symptoms return afterwards. If the liquid effusion is dispersed, and got rid of, without the admission of any air, the parts are brought back gradually to their natural condition. When the trocar has been introduced, pressure should be applied, watching the liquid whenever it has a tendency to recede, and carefully applying the finger upon the orifice, at the same time using pressure in an increased degree, so that no air may be transmitted through the trocar; and if the patient should make any sudden act of inspiration, and bubbles of air flow in, which the operator cannot foresee, it is necessary to have the thumb ready to press upon the orifice immediately, and cover it over. It is usually desirable not to go too far at first; it is possible to empty the chest so far as to get nearly the whole quantity of fluid out, but sometimes mischief may arise from drawing off too much. The next precaution is to use every means to keep the trocar in its place, and continue the pressure until it is removed. On ceasing the pressure, the chest rises again, and resumes something like its natural condition; this is one of the great objects in the performance of the operation, —to restore the parts to their natural condition. It may be necessary, however, not to complete the operation till after an interval of some days or weeks. If the disease shews a tendency to recur, this operation may be required to be performed again, and it may be repeated on the same spot, or on a spot near to it. I recollect a case of pleurisy which proved fatal, in consequence of the supervention of bronchitis after the operation; the case was one that indicated the necessity of the operation of paracentesis, but too great a quantity of liquid was removed; the patient expressed himself at the time almost entirely relieved, but he died four or five days afterwards: on examination of the chest after death, the tubes of both lungs were found filled with bloody mucus, and it was clear that the patient died of bronchitis. Tartar-emetic ointment, rubbed into the chest, might here have been of service. An attempt has been made to change the character of the purulent secretion by injecting the cavity with warm water and a little nitrate of silver; in cases of empyema this has been practised, and I heard of one instance, in which it had been done successfully.

Abdominal Black Line.—Mr. Turner of Keith has proved in a very many instances the presence of an abdominal black line, during and immediately after parturition, of which he considers it to be a good diagnostic sign. Were it constant, which it appears not to be, it would be of great service in medical jurisprudence.

Symptoms produced by different Narcotics.—The toxicological effects of the most common narcotic agents on the animal frame have been thus briefly distinguished by M. Gitner:—Belladonna, besides its narcotic effect, is productive of furious delirium and great congestion in the brain. Hemlock and henbane have rather a soporific than a narcotic power, but they produce cerebral congestion and convulsions. Stramonium excites a scarlatinous redness of the genital organs with salacity. Nux vomica and strychnine bring on epileptic convulsions and a peculiar rigidity of the extremities, symptoms lasting till a sudden prostration takes place. Alcoholic drinks produce lethargy with spasms, but no strikingly marked congestion. Opium and morphia cause slight delirium, which soon gives way to supineness; face ruddy and extremities cool; pulse weak and tremulous; constipation or else involuntary evacuations. Tobacco produces a state of asphyxia and syncope, paralysis and relaxation of the limbs, and involuntary evacuations. Poisonous fungi, with a true narcotic effect, make the extremities cold and cause constipation; abdomen inflated and painful; pupils contracted. Prussic acid, bitter almonds, &c. induce a state of asphyxia and paralysis, and, if death be not immediate, a soporific state with congestion in the brain.

ON MESMERO-PHRENOLOGY AND THE FUNCTIONS OF THE CEREBELLUM.

By Henry G. Atkinson, Esq. F. G. S.

Being a paper read at the Second Meeting of the Phrenological Association, July the 4th, 1843.

Dr. Elliotson in the Chair.

Time is the cradle of knowledge,—one error gives way after another,—prejudice is broken down and crumbles into very dust, never to rise again; but the war goes on around and in the distance, long after the victory has been gained. A year has passed away since the Phrenological Association assembled together, to listen to startling propositions and the announcement of a new truth—a truth which was to open a wide field of enquiry into the philosophy of man, and mark an era in the world's history—that truth is mesmero-phrenology. It was alluded to in Dr. Engledue's powerful and truly philosophical address, and in the face of an opposition, I read my paper on the subject, detailing something of what I had discovered, and knew to be true, and of incalculable importance to phrenology and to the world. But in what a different position do we now stand! At that time there were only three gentlemen present who were convinced of the truth of what was advanced, and now how few are there, among phrenologists at least, who doubt its general bearing, whilst many journals have been commenced on the subject, and thousands have become convinced in every part of the country, and throughout Europe and America. Such is the force of truth over ignorance and prejudice. The cry of expediency went forth from our assembly, and was echoed among the hills far in the north; but which is fast dying away, whilst the world is beginning to learn, that it is always expedient to speak the truth, and that he is not worthy of the title of philosopher who would ever mislead the ignorant, or pander to the vulgar prejudices and the bigotry of an age: the only expediency to be considered, with regard to truth, is the best means of applying it to the purposes of life. But time will wear out the old clothing of thought and truth,—reason and common sense will come to be the fashion. Mesmero-phrenology is now fully recognised by many able minds; it is established to be true in science, and we must now make every use of the means which we possess to advance our knowledge of the functions of the nervous system, and for the cure of disease. However, before I announce some important discoveries which I have made and confirmed since we last met, I will answer those objections which continue to be raised against the conclusions which many of us have drawn from these phænomena in mesmerism,—objections which I fully answered in my paper last year, but which were not published; at the same time, I shall set forth my own objections to, and explanations of, some novelties which have been advanced by others, for I desire to give every objection its full weight, that it may be the sooner and more completely answered, and set aside. Let truth be our only aim—let us have faith—let us be humble before truth—let us seek it as the road to all excellence, and at whatever cost, for all the ends of truth must be good; let us proceed, then, with diligence, but with caution, meditating by the way side, walking in the fields, and waiting every day upon nature. Each succeeding and well-considered fact will lead us on, and convince us the more of what is already known, for all truth is valuable and connected, and it is only by meditating on the relations of truth, that we correct our errors, and arrive at any important results. There is no compromise in nature,—we must go on,—we cannot proceed too far,—no one ever goes far enough if he be in the right road. But in all change there is some evil, some injury to our habits of thought, and errors arise from our imperfect knowledge, but we can never get to the end of a journey by putting up at the half-way-house, or to the ends of knowledge by playing upon the surface; there is no point in knowledge where we can say, "hold, enough,"—onward we must go,—endless progression is the course of nature,—hope, the desire of all that is great and good,—the love of excellence continually lead us on. Bacon, Newton, and all great minds, have looked onward: our instincts, our charity, our happiness, the love of mercy, and the pleasures of knowledge, all stimulate us the more to seek to know what we are, and the ways of Nature, that our judgment be guided rightly, and not prove a false guide, but lead us to the spot "where the star appeareth, and to the very house where the babe lyeth."

Perhaps we cannot better lead another to the conviction of truth, than by shewing how we ourselves became convinced, and in the announcement of any new discovery, it is always well to explain how we were first impressed with the idea, and afterwards proceeded; for Nature always tells her own tale best, and in the most impressive way; by so doing, we, in some measure, place others in a similar position with ourselves, and enable them to judge through the same evidence which has convinced us. For some years I had been labouring to collect facts to enable me to disprove Mr. Lockhart's assertion, that we are never aware of the action of any particular portion of the brain, during the manifestation of any special faculty. This assertion I have been able to disprove by curious cases of inward conciousness—by local pains and sensations following the excitement of particular feelings—by the action of the head following the excited part, and the head pressing upon the organ. The facts which I gathered upon these points are very interesting and important, but time will not allow me to enter upon them on this occasion. I was induced to follow out this enquiry from a peculiarity in my own constitution, that in particular states of ill health, I am conscious of the local action of different parts of the brain; my hand involuntarily touches the excited part, and pain is often felt there, which draws my attention to observe the phenomena. I mention this circumstance now to shew how my mind was prepared to seize at once on any similar effects which I might observe in the mesmeric trance, and also from the conviction, that in mesmerism the patient is greatly influenced by the peculiar condition of the mesmeriser, even where there is no particular or local sympathy whatever, which I have found to be the case in almost every instance; for I am convinced, and believe the experience of others will prove, that one operator may produce a class of phenomena which is very rarely induced by another. To which fact I attribute my success in mesmerism, and the discovery of mesmero-phrenology;* for the four first persons I had entranced proved to be the most complete cases of mesmero-phrenology I have yet heard of. I observed the phenomena the second time that I mesmerised, whilst yet the whole matter was novel to me. The discovery was no echo to my enquiry, but was unfolded to me in nature, quite unexpectedly and unsought for. Nor was there any sympathy with my thoughts. I never *touched* the organs: I did not come near them: I never thought of them, but I gazed upon the phenomena of a wondrous dream in amazement and delight, not knowing what to expect next, or whither I should turn, and exclaimed to those around me, "Oh! that Gall were here! Oh, that he had lived to see this!"

The objections which have been urged against mesmero-phrenology have no reference whatever to what I observed. I saw a subject who was entirely ignorant of phrenology, and of mesmerism, in what may be called the waking dream of somnambulism, breathing forth the most intense aspirations, uttering the most extraordinary exclamations of excited feeling, pressing the fingers on the excited part, and following from organ to organ as the feeling changed; now pressing firmly

* The discovery of mesmero-phrenology was made by Dr. Collier in America, by Mr. Atkinson in London, in Nov. 1841, and by Mr. Mansfield at Cambridge, in Dec. 1841, and not by his friend, Mr. Gardener, in Hampshire, who merely observed, that the organ of tune was pained when he played some notes of music out of harmony—an effect which has nothing to do with mesmero-phrenology, and a matter of common experience in our ordinary condition. Dr. Collier has since denied the existence of what he professed to have discovered.

under high excitement, and changing quickly, with the rapidity of thought; now covering one organ, moving the fingers gently over the part; now taking in a combination, and using both hands to cover a distant part excited in this combination, and generally on one side of the brain only, except when under great excitement. What was I to think of all this, but that it was indeed a glorious truth, which I might defy the art and the conceit of scepticism to disprove. In these cases, there was no sympathy with me, no contact, no knowledge of phrenology—a complete ignorance of mesmerism. I sought in vain for an objection to what I saw and heard. There was no following of my thoughts; it was I who followed theirs; for several times I did no more than watch these phænomena, as I have related them. I then found that I could lead the thoughts by conversation and by music; I pictured scenes in rapid succession, changing the thoughts at will, the patient's hands always following the excited part—never failing. I spoke rapidly; I had no time to consider what organ I was likely to impress, but the hand continued to follow instinctively, and without fail. In the midst of tears, I could induce laughter, or lead from love to hate, from good to evil, joy to sorrow, from excited passion to quiet thoughts, or to calculate figures, and in a few moments induce a profound and quiet sleep, or awake them on the instant. I tried to influence them by my will, by sympathy of thought, without success. I next thought of enquiring of the sleeper where such a feeling was experienced, and the answer I always found correct, though often what I did not expect, and it required some reflection, or further enquiry to comprehend it. There could be no echoing of thought, no suggestion here. I then tried to demesmerise an organ by crossing my thumbs over it without touching, and succeeded: and lastly, I tried touch, and pointing to the organ, and found that this would excite the part, and that I could play upon the head as upon the keys of a piano-forte, and produce just what music I desired, but not any exact train of thoughts, but only the action of particular powers.

I believe that where touch is necessary, it is generally not any mesmeric influence which excites the part, but simply the effect of pressure, which puts the part in action, as the pressure of any foreign body will often cause the excitement as readily as the finger; it induces an involuntary and unconscious attention to the part which excites it. There can be no sympathy in this, besides that in cases of mental sympathy or thought, reading the precise thoughts are echoed, which is not so in these cases.

I then induced a stranger, who was completely ignorant of phrenology, and a sceptic, to mesmerise a very susceptible lady, and to touch the head any where he chose, he being unacquainted with the situation of the organs, and the result was precisely the same. I found besides, that I could fatigue an organ on one side of the brain, until it could act no more, and when I began with the other side, the same feeling continued with renewed energy, just as we rest from one foot upon the other. I never have found that I could influence my patients by my thoughts: I have tried it repeatedly, and always without success. If ever I have touched, or pointed to, any part of the head by accident, intending to have excited another part, I have invariably found that the part touched became excited. There are cases, I am aware, when the patient can read your thoughts,—cases of curious sympathy, when you may suggest thoughts, but I have had none of these; they are not the cases to which I allude; nor have I ever detected the slightest imposition, or desire to follow my will: my first case was always at variance with me; besides, it is easy to perceive what are the peculiarities in every case, and each must be taken only for what it is worth, for no two are precisely alike, although there are many which closely assimilate, and may be classed together. In many cases, you can only excite a few of the organs, and no willing or suggesting, no explaining, not even if you ask and beg of the patients to allow themselves to be excited in a particular way on the touch of other parts, will have any influence whatsoever—the string is unstrung, and will not respond. I wish that sceptics would try, and work at some of these difficulties, until their patience be well exhausted; it would be a capital lesson for them. Again, those whom you are accustomed to influence with the greatest ease, on getting a slight cold, or through some other disturbing cause, become sometimes, for the time, perfectly unimpressable,—a failure often the best proof in such experiment; but everything in Nature is proof to those who have learnt to read her pages right. All ye, then, wanting faith, go to Nature, and learn as little children, that ye may become wise, nor ever judge again without knowledge, nor ever hastily conclude, that all is deception, when you yourself may be the only one deceived or deceiving, for want of further enquiry into all the circumstances of the case. The sun does not go round the earth, although it appears to do so.

There are but two objections of any weight to the general conclusions we draw from mesmero-phrenology, which may be referred to the question of sympathy and that of suggestion. The first, at least, acknowledges the truth of mesmerism, and of its highest phenomenon, of mental sympathy—a phenomenon which, like all the other phænomena of mesmerism, is seen to exist sometimes without mesmerism. But, because that some persons have been able to read the thoughts of others and to sympathise with their peculiar condition, it is no reason that all must; they are the exceptions, not the rule, and are no argument against phenomena arising from other causes, in cases where there is no sympathy whatever, where you cannot induce sympathy by anything you can do—where you cannot bring out a sympathy and get an echo to a thought, try as hard as you can and; when you find that your touch always produces its effect on the part, against your will, it would be as reasonable to suppose that because we occasionally find cases of clairvoyance, all somnambulists may read with their eyes closed. I have had two beautiful cases of clairvoyance, but not a single instance of mental sympathy. Again, the objection has no weight, when a person, ignorant of phrenology, has affected another equally ignorant of phrenology. It does not bear against those cases of dreaming, where the hand follows the excited part, which I have alluded to, or the beautiful phenomena of internal vision. In fact, the objection has little weight at all, and is confined to cases, which are exceptions, and not the rule. The second objection is that of suggestion, which is also acknowledging another exalted power in the mesmeric somnambulism. But this is an objection which can have no weight, except in a very few instances. It is true that in some cases if, by design or accident, a feeling becomes connected with the touch of a certain part, that feeling or thought may occur again when the part is touched, but only, I believe, when the patient is impressed with the notion that it will do so. But I have never been able to carry this to any extent, nor do I believe that any one else has done so, or that it is possible, when it is not accompanied by sympathy. A patient I have, will tell me to touch her in a certain way to induce certain effects, to induce sleep, the extatic dream, or to recal particular ideas, on the principle of tying a knot in the handkerchief to suggest or assist the memory, but I have not been able to do more than this with suggestion.

The objection, therefore has no weight in those cases which I have described, although it is a question of much interest, and should be well enquired into and understood. For we must not shut our eyes to what is going on, but follow out our experiments with the most cautious enquiry. Mr. Hall, and others, profess, I believe, to have discovered organs for almost every peculiar action of the body, as of swimming, diving, leaping, running, flying, &c., and these effects, I understand, are produced on patients by touching particular parts of the head. I have induced these states, too, but have never thought of attributing them to the action of separate organs, because I have discovered the origin of the muscular powers, and have found that different feelings in combination with these, induce particular actions; in fact, a kind of natural language in muscular action, as in the dance or pantomime. I know that these muscular powers are much more readily excited in most subjects than any others; you cannot always restrain their action when exciting any other part, and the greatest energy of action may be induced. It is with these muscular powers that I find the greatest sympathy, they will in many cases follow actions which you really perform, or merely will. I have seen this done even to a patient in another room, whose thoughts you could not will at all.

It is probable that the muscular powers are more readily excited from their being more constantly in play, and producing an influence more directly sympathetic and similar through the whole system, for there is often considerable sympathy or tendency to similar movement in muscular action, producing the most extraordinary irritation, or the answer to any movements you may make even behind the back of the patient, which was the case with one of the Okeys—those poor girls who were so falsely and heartlessly accused of imposition—so cruel is the ignorance and the conceit of ignorant critics! Sympathy will sometimes occur also with regard to taste, smell, and pain, and even of the condition of diseased parts, enabling the patient to detect the exact nature of the disease of other persons in contact with them, and in these cases there may be no mental sympathy, or thought-reading whatever. We may now understand how by touching the end of the nose, or other parts you may, in some instances, irritate the nerves of muscular action, which will excite the organ of this power in the cerebellum, and there will arise a disposition to be in action, and by drawing the hand from the ear to the chin, you may cause excitement to subside; or, having touched a particular part, and the organ becoming active in connection with that part the first time, the suggestion, or habit of becoming active on the touch of that part, may become established, but in either case it is one nervous mass acting upon another with which it is connected. However, time will not permit me to dwell longer on these interesting points; but if Mr. Hall will only ask his patients, after the excitement of any particular action, where they felt the power, or sensation, or pain in their head, he will soon become satisfied of the truth of what I have stated, and will find that in touching the forehead he is exciting the cerebellum, the effect passing through to the organs which are at the back, even when there may be no suggestion, or, what is commonly understood, by sympathy, he will find that each particular action arises in the excitement of a combination, and he may also observe a relation or connection to exist, which I explained in my paper last year, between the sides of the brow at constructiveness and the desire of activity or industry, beneath hope and the sense of motion, joining with wonder; but let Mr. Hall excite the organs of the muscular power which I shall presently point out, and observe the effect, and take the other means which I shall explain for obtaining information on these important questions, and if truth be his object, as I have every reason to believe it is, I will answer for his soon becoming convinced of his error.

I have not seen Mr. Hall's cases, but I am quite sure that this is the true explanation of the effects which he produces, and I trust that this explanation may relieve many who appear perplexed on this account, and induce Mr. Hall to re-consider the question, and acknowledge his error, if it be one, thus removing at once an evil which I fear is bringing ridicule upon the most important enquiry which ever engaged the attention of man. Probably Mr. Hall is peculiarly constituted as regards the muscular powers, inducing a greater sympathy in these states, or more ready excitement of these powers in his patients; or, his mind being impressed with the subject, may influence the patient. However, the effects are beautiful, and very important, in whatever light we view them; but the errors of mesmero-phrenology, like those of chemistry, and other sciences, have arisen, I believe, almost entirely from hasty generalisation, and imperfect analyses, from not pausing to give every thing its due weight. Hasty minds, eager for novelty, rush at once to conclusions from what they see, without sufficient enquiry and reflection. They become prepossessed, and it is hard for them

to get clear of their errors. Simple powers are taken for combinations, and combined forces for simple ones. Then we may perceive, on looking over the list of new organs which have been proposed by some Americans, and by Mr. Hall, that the very most of them are clearly the manifestations of two or several powers acting in combination. If you place your finger on the boundary of two or three organs, you may excite them all at once, or one organ, in some cases, particularly if the mind of the operator be not calm and collected, may excite another, to which it is intimately connected, or at the opposite side to which you point, and so form a combination; and, just as I have shewn with regard to the muscular actions, you may obtain new organs *ad infinitum*. Thus it requires the greatest care in drawing conclusions from the effects of touch, or even from pointing to the head, particularly in imperfect cases, and where there is sympathy and imitation. You must be willing to be instructed, you must ask for information from those more perfect cases where there is no sympathy, but which possess internal consciousness of actions going on.

I described a beautiful case of this nature at the meeting last year, and named some of the discoveries which I had been enabled to make through this means. I have since had another similar case, but have not heard of any besides—probably they exist; other mesmerisers may possibly have induced this state, but not thought of following out the same method of investigation to develope their peculiar powers, by enquiring where any particular faculty is located, whether a power is the result of combination? And again, by requiring the patient to describe the function of any particular part, how and where it combines with other parts, to point out the precise line of demarcation, and to describe its depth and force. By these means you may, with great care and patience, obtain a precise analysis of each power, and the function of those convolutions which are beneath others, and at the base of the brain, and thus acquire the power of obtaining knowledge, and of completing the physiology of the brain in a manner that could not have been gained by any other means whatever.

At the meeting last season, I referred to some of the discoveries which I had made through these investigations, and among others, the organs of the muscular powers in the cerebellum, but abstained from pointing out the exact location of the several powers, it being my wish that others should investigate the subject, and that we might afterwards compare notes. But I regret to say that I have not heard of any one having done so. My paper was not published at the time, and afterwards only in parts, so that it did not make that impression which I had hoped it would. Besides this, our minds were at the time so much occupied by the opposition and unphilosophical proceedings of many of our members, that the real merits of the paper were never discussed, but the subject opens to us such a vast field of enquiry and of usefulness, that we must proceed with caution, and take up a few points only at a time. I shall, therefore, confine myself, in this paper, to a description of the muscular powers, as bearing out the truth of Sir Charles Bell's discoveries, and completing them in the most important points which were unascertained; thus setting at rest the question which has caused so much discussion among physiologists and phrenologists—the question of the function of the cerebellum, and the origin of the muscular powers. I have long considered the cerebellum to be the organ of the muscular powers, as well as of amativeness, and had written a paper on the subject; but I had no idea of localizing the separate powers,—but the size of this organ, its construction, situation, and connection with the nerves of motion and of sensation, warranted the belief that it was the organ of the muscular powers. Dr. Gall, Combe, and others, seem to me to have answered the objections, and explained the results of the experiments of Majendie and Flourens in a most satisfactory manner. It was assumed that the whole cerebellum was the organ of amativeness, and the necessity of examining it in relation to the energy of the muscular powers, seemed to be quite overlooked; whilst if Gall's usual method of enquiry in other cases had been followed out in this, I am sure that something more would have been arrived at long since; for it does not appear that Gall, or those who followed him, ever examined the cerebellum with reference to the muscular energies of the individual; but a mesmeric somnambulist is able to dissect and analyse the brain, where observation has failed, and the greatest physiologists, with their probe and knife, have only continued from time to time to perplex the question the more.

(To be continued.)

PERISCOPE OF THE WEEK.

Lancet; Annali Universali di Medicina; Dublin Journal of Medical Science; Annales d'Hygiene Publique; Medical Gazette; Journal de la Societe Royale de Medecine de Bourdeaux; Nederlandsch Lancet; Journal des Connaissances Medico-Chirurgicales.

Hysteria.—Dr. Todd is of opinion that hysteria is caused by physical disturbance of the nervous tissue itself. An ordinary physiological action cannot take place without some change in the disposition or relation of the molecular elements of the tissue, which is the seat of the phenomenon; in diseased action the change is doubtless more extensive and more permanent; nor is it confined to the relation of the particles; their composition may also be impaired. The chemical constituents of the nervous system may not retain their healthy characters; its albumen may not be precisely what it ought to be, or its phosphorus may be too much or too little, or some other elements may not be present in due proportion.

Emetics in Phthisis.—It is stated that 176 patients labouring under consumption, 47 in the incipient, and 129 in the advanced stage, admitted during a period of four years into the military hospital at Capua, were ultimately discharged as perfectly cured, their treatment having consisted in the administration of a table spoonful of the following mixture, night and morning: ℞. Pulveris antimonii potassio-tartarizati, grana tria: syrupi caryophillorum, unciam: decocti althææ, uncias sex, misce. The dose was to be repeated until vomiting ensued. The practice of giving repeated emetics in the treatment of phthisis is by no means new; we have seen several examples in which benefit was derived from their exhibition. That which we have generally seen employed was the sulphate of copper.

Double Hydrocele.—A case of double hydrocele from a sacculated condition of the tunica vaginalis is related by Dr. Macdonald, of Glasgow, in somewhat pompous language. The only peculiarity of the case is, that from some cause the cavity of the tunica vaginalis was divided into two, about 4 ounces of fluid being contained in the smaller, and 21 ounces in the other. The patient would not submit to an operation for the radical cure of his disease.

Hydrencephalus.—Dr. H. Kennedy read a paper before the obstetrical society of Dublin, on a form of hydrencephalus, occurring between the ages of 12 and 25 years. Of this he has seen about 30 cases within the last nine years. It is more common in females than in males, in the proportion of two to one. Of the males attacked, three-fourths of them were persons of a very heavy aspect; anything but intellectual, the face being too large for the size of the head, and the lips also large, with a coarse skin. The females were generally persons of a well-marked sanguineous temperament. In the majority of cases it commences with symptoms of mild fever, which continue without change for 10, 12, and 14 days, at which time a marked increase in the degree of fever may be observed at night. It sometimes, however, begins by a distinct complaint of the head for some days, the patient being still able to go about. During the progress of the disease, the pulse exhibits the character of hydrencephalus; alterations about the eye are often among the earliest symptoms pointing out the impending mischief. The pathology of the affection is confined in great part to the arachnoid at the base of the brain, with more or less effusion into the ventricles, and occasionally tubercular indications have been found in the lungs and on the peritoneum, giving rise to the belief that the complaint is allied to struma. It appears to be in some measure hereditary. The best treatment seems to be by local bleedings, with mercury and the application of blisters. Great relief was always experienced for a few hours in Dr. Kennedy's cases, after the application of leeches to the head. The prognosis is in the highest degree unfavorable. Dr. Kennedy observes, that in his experience, with very few exceptions, it has terminated fatally; he has never seen a patient recover after the pulse had once fallen.

Health of Coal-Miners.—M. Villermé thus sums up the effects of working in coal-mines in Great Britain, on the health and constitution of the children employed. It results that from the very early age at which they are set to work that their growth is impaired, puberty retarded, the period of infancy being thus lengthened, while the adult period of life is materially diminished, by the early induction of serious diseases, which weaken, deteriorate, or exhaust the physical constitution, and destroy the strength. This happens to such an extent that the virile period, which should be much the longest portion of a man's life, does not endure in the colliers, working in the more unhealthy mines, longer than the period of growth. Many of them are old at forty, and they die much earlier than others.

Acute Glanders in the Human Subject.—Mr. Hamerton, surgeon to the Castletown dispensary, has placed upon record three cases of acute glanders in the human subject, all running the same course, and terminating fatally, and all traceable to the same cause, i.e. contagion from a diseased horse. The symptoms in each case were very similar :—the disease commenced by the invasion of febrile symptoms of a low type, which were followed by an attack in one of the limbs of an inflammation resembling erysipelas phlegmonodes, but of a darker character, and presenting the boggy feel earlier; similar appearances soon appeared elsewhere in the system, sphacelus occurred, together with the formation of gangrenous pustules—the disease next shewed itself in the nose and throat, with an ichorous discharge, general symptoms of strongly marked typhus appeared, and the patient died, after after having been a prey to the most intense suffering. The identity of the disease with glanders in the horse was proved by the inoculation of an ass with the fluid contained in one of the pustules. The animal soon shewed all the symptoms of acute glanders, and died in five days. So great was the excitement among the peasantry in the neighbourhood, and so alarmed were they by the occurrence and fatal termination of the three cases, that they broke down the house where the ass, that had been experimented on, was, and would have killed it, but for the opportune arrival of Mr. Hamerton. This gentleman seems to doubt the possibility of this disease being communicated from man to man, from the fact that although the three patients were all living in close, ill-ventilated and crowded cabins, and wore the same clothes throughout the disease; in fact, although every circumstance was present by which the atmosphere could be tainted, still neither friend, relative,

nor nurse-tender sickened of the disease. Actual contact with the diseased matter appears to be necessary for the transference of glanders. Mr. Hamerton concludes by remarking,—in the absence of any therapeutic means of curing, or even alleviating, this formidable and fatal disease, one in which the records of medicine have not furnished a single instance of recovery, and one also in which the physician is unable to afford an interval of ease, or assuage the most frightful agony that human nature is exposed to; with all these facts before us, and in the humiliating reflection of being merely silent lookers on, with all the resources of our arts in this disease futile and useless, we should turn our thoughts to preventive measures, and impress upon the attention of the local authorities in our respective districts, the dangerous and fatal consequences likely to ensue, by allowing glandered horses to exist, or to be suffered to go at large.

On the Employment of Oxide of Carbon in the Manufactures, and its Action on the Animal Economy.—The gases having come into use to a great extent for heating furnaces, instead of coal or charcoal, M. Ebelmen instituted a variety of experiments, and has shewn that a reverbatory furnace may be raised to a white heat, and metal melted, and puddled, by means of the flame arising from the combustion of oxide of carbon and hydrogen gases, obtained by the decomposition of water by red hot charcoal. The advantages of this proceeding are such as to cause it in all probability to be generally adopted; a greater amount of heat is obtained from a given quantity of combustible, the draught of the chimney is avoided, there is greater regularity in the intensity of the heat, besides which the operator can, at will, direct oxidizing or reducing flames into the same foyer, thus changing the metallurgic operations into real chemical processes, differing only in the greatness of the scale, from those of the laboratories. In addition also, the worst kind of fuel can be advantageously used in preparing the gases, thus affording another source of economy. As a drawback from these advantages, there is the double risk to the workmen of asphyxia and explosions, and many accidents have already occurred from breathing these gases in the factories where they are used. The oxide of carbon gas, which was discovered by Priestley, is a colorless, inodorous gas, having a density of 0.9670. On the approach of a lighted candle it burns with a blue flame, and is changed into carbonic acid, by absorbing half its volume of oxygen. It may be said to be formed whenever charcoal is burned without receiving a sufficient quantity of oxygen to form carbonic acid gas. It exerts a very energetic action on the animal economy, producing at first slight headache, then vertigo, and insensibility, without the sufferer being able to utter a single word. To produce these effects, a mixture of from 15 to 20 per cent. of oxide of carbon, with the atmospheric air, is all that is requisite. These symptoms have been presented by workmen exposed to the deleterious action of this gas, but it should be added that the most simple means were sufficient for their recovery, after exposure to the air, and they were generally able to resume work in a few hours. Mr. Witter, who experimented with the gas on himself, was insensible for half an hour, and was restored by the insufflation of oxygen gas, after which he labored under convulsive motions, vertigo, nausea, severe headache, and shiverings, alternating with an unpleasant sensation of heat. He was blind for some time, had a strong desire for sleep, which, when yielded to, was painful and frequently interrupted: the pulse was frequent and very irregular. All these symptoms yielded to a common emetic, and the next day he was as well as ever, except from the effects of a fall, which occurred when he became insensible. M. Guerard mentions two cases which terminated fatally, and were apparently due to the inhalation of this gas.

Ventilation of Cotton Mills.—M. Pouyer, of Rouen, has had a machine constructed for ventilating his cotton works, by which the air is purified, and the unpleasant smell generally noticed on entering those places entirely obviated. It consists of a large drum, with a central opening, 60 millimetres high, and 40 wide; an axis sets four wooden wings in motion, the diameter of each being one-thirteenth millimetre; these wings revolve from 360 to 380 times in a minute The drum is in communication with the external air by means of a large wooden tube, having an orifice 30 millimetres high, by 70 wide. The drum is placed in the ground floor. It draws in from 40 to 50 cubic metres of air every minute; it has one-tenth of a horse power, and the total cost of its construction and elevation is about 4*l.* Numerous experiments were requisite so to regulate its action, as to prevent its being excessive, or too slight. It now works very pleasantly; the draught is moderate, but sufficient to remove the dust and light floating flakes of cotton. The warming of the room in winter is easily effected, and the temperature does not differ more than one or two degrees from what it was before the ventilator was used. The Royal Academy of Sciences at Rouen appointed a commission to examine and report on this apparatus, and the result was the award of a silver medal to M. Pouyer. In order the better to appreciate its value, the commission caused its use to be suspended for an hour, the air-room became thick and full of dust; half an hour after the ventilator had been again used, the air was purified, and all unpleasant odour had disappeared. Since this apparatus has been in use, no unpleasant sensation is experienced on entering M. Pouyer's workshops; the men have generally a good colour, offering a marked contrast with the pale faces of the workmen in other factories, and some of the workwomen, who had been obliged to give up on account of the intolerable oppression they experienced, have been enabled to resume their work without experiencing any inconvenience from it.

Registration of Deaths.—There is a long paper published in the *Annales d'Hygiene Publique*, in which the writer, after alluding to two recent cases of interment of the quick, advises that in every instance no burial should be permitted without a certificate of the death from the qualified officer, he having previously satisfied himself by actual inspection that the person is really dead. He also recommends that the officer or registrar should be a member of the medical profession, advice so consonant with sound sense as scarcely to need its reiteration. The former recommendation, that no certificate should be granted authorising the interment, save after an inspection of the body, will not be needed, if, in every instance, a medical certificate be previously obtained, stating the fact of the death, and the cause thereof. The statistical documents put forth from the Registrar General's office are partially invalidated, from the want of correct information from this source.

Separation of the Placenta.—Dr. R. Lee was recently called to a lady who, without the occurrence of any accident, or of any premonitory sign, was suddenly alarmed by a gush of blood from the vagina. When seen by Dr. Lee, an oozing of blood continued, but there were not any constitutional signs of flooding. The os uteri was high up, closed, and directed backward, so that the nature of the presentation could not be ascertained. Labour had not then commenced, but slight pains were experienced in four hours, when the os uteri was felt dilated to the extent of half-a-crown, no part of the placenta presenting. Dr. Lee ruptured the membranes, and held up the head so that the liquor amnii might escape. The child was expelled dead in two hours, and no hæmorrhage followed. The placenta was found lying loose in the vagina, and on its removal, and tightening the binder, masses of dark coloured coagulated blood escaped in such quantity as nearly to fill a wash-hand basin. Internal hæmorrhage had been going on for some time, and the patient was in a state of great danger for many hours. Neither turning, nor the use of the plug, would have been of service here. Had it been possible, at the commencement of the hæmorrhage, to have ascertained with certainty whether or not the placenta presented, it would have been better practice then to have ruptured the membranes, than delayed doing so for some hours, as it was evident from the first, that there could be no safety till the delivery was completed. We remember assisting (as our continental brethren say) at the *post-mortem* examination of a woman, who died from internal hæmorrhage from the complete separation of the placenta, without having lost any blood externally. The cause of the separation was supposed to be, carrying a strap round the loins, from which a heavy basket depended.

The Early Application of the Starched Bandage Injurious.—Seutin, who invented the starched bandage as an application in cases of fracture, recommends it to be applied from the beginning, but Mr. M'Cash, a surgeon, has narrated a case in which it proved decidedly injurious. He put up a broken fore-arm with this bandage, and did not see his patient again for seven or eight weeks. The bones were then in perfect apposition, and firmly united. A glueing of callus was still discoverable around the joint. The finger and wrist joints were stiff and immoveable, even under the strongest endeavours of the patient to make them yield. The arm was again put up with a simple splint, and when seen five months afterwards, the fracture was firmly united, the fleshy part of the arm unusually round and firm, conveying the impression, when handled, as if the muscles were matted together; flexion and extension, save to a limited degree, destroyed, the fingers rigidly hooked on the palm of the hand, and could not be straightened. The arm was useless as an organ of prehension; sensation continued undiminished. Mr. M'Cash considered that this state of the arm was caused by an abnormal condition of the muscles, the result of inflammation, and not induced by rigidity of the joints.

Luxation of the Olecranon Upwards and Backwards.—M. Croes, an officer of health at Utrecht, was called to see a soldier who had fallen down stairs. On examining the left arm a dislocation of the ulna, upwards and backwards, unaccompanied by a corresponding luxation of the radius, and without the slightest trace of fracture of either bone, or of their apophyses. The arm was very much swelled and deformed, the fore-arm and hand turned inwards, and the olecranon projected greatly, about two inches above the articulation. Flexion of the arm was

almost impossible, and it caused severe pain. The reduction was speedily effected, and the patient was soon well.

TO CORRESPONDENTS.

Our subscribers who have been furnished with accounts, are requested to favour us with a remittance for the amount. Our rule, like that of all other London journals, is to be paid in advance of all orders. Those, therefore, who are in arrears, will see the necessity of at once placing themselves in a more respectable position. There are we see on our books a few, a very few, *with such long accounts, attached to their honoured names, that we cannot think they belong to a liberal profession, in which one of the first of duties, according to our authoritative comment, is to pay for medical journals duly and regularly furnished.*

X. Y.—*We shall give " a pencilling" next week.*

B. D.—*Apothecaries are exempted from serving on juries by the* 6 *and* 7 *of W. III, cap.* 4, *made perpetual by* 9, *Geo. I, cap.* 8. *The exemption extends to constableships.*

Mr. Lawrence, M. R. C. S., *writes from Donhead, assuring us that there is no practice connected with " the substantial stone built dwelling house" advertised in our last number, and that another practitioner resides within two and a half miles of the house.*

"Vis Conservatix" *sends us an extract from a letter received by him from Rome. The fact announced is interesting; and, though we have referred we believe to it before, will not be the worse for further detail:— " A man in Rome, connected with the botanical garden, has discovered a method of preserving* animal *and* vegetable *substances, by producing some chemical change in them, which makes them very hard, without destroying their form,* colour, *or* elasticity. *I have seen,* and handled *flowers, insects, fishes, birds, &c., preserved in a most marvellous manner, the first without the slightest loss of colour, the birds with plumage, and the insects with their minutest parts, quite uninjured. The man states that he can preserve anatomical specimens, shewing their most intricate parts, in the* same *manner, but that he is not allowed to do so by the Government, lest the application should interfere with the miraculous preservation of the* 'relics,' &c. *Would not the invention be of great value in England ?"*

A Correspondent *favours us with an advertisement occurring in the* Times, *of July* 23, *asking for " a neat, quiet, and obliging young man, as retail assistant, who will not object to open, shut, and clean the shop, and provide his own sleeping apartment out of the house. Salary* progressive, *commencing at £12." The worthy " surgeon," for so he calls himself, seems to have been resolved to allow himself plenty of room for* progressing *Our educated, " neat, quiet, and obliging" young brethren out of place, are much, indeed, to be pitied, if such are the services generally expected from them, and such the remuneration commonly doled out to them ! With such a state of things, salaries, and many other matters, may be " progressive," but charity and justice* cannot. *The good Samaritan of the* Times *holds out the further lure of a remotely possible partnership ; and, as his offers are perhaps one degree better than those of the Poor Law authorities, and may have temptation for some unfortunate brother, we may gratuitously advertise our modern Howard's residence as that of Mr. Baker,* 2 *Beresford Street, Walworth.*

A Subscriber, Cheltenham, *has our apologies for the delay. The Camden Institution is limited in the number of its members, which is now complete. The Sydenham Society is formed for a similar object for medical men, and the rules may be learned from Dr. Babington, George Street, Hanover Square. It has been suggested to us that if the Provincial Medical and Surgical Association, would spend the money not absolutely needed for benevolent purposes, in publishing good useful books, especially translations from the best French and German surgeons and physicians, the benefit of the members, as well as their gratification, would be infinitely increased. Whether any proposition of this kind will be submitted to the Association at its next meeting we are not in a position to say.*

Mr. Bland.—*The experiment has been tried, we understand, without success, and we should not be disposed to recommend a repetition.*

A Student *will find in Dr. McCormack's work,* " Methodus Medendi," *the sort of book he requires. It is a compressed compendium of all that the best authorities have recommended on experience or speculation. A less comprehensive, but a more guiding and authoritative work, may be found in Dr. Elliotson's Practice of Physic.*

Mr. Bolton.—*Professor Brande's lectures extend, as we announced they would, to* twelve. *They are all included in the present volume.*

M. Ollivier d'Angers *is thanked for the courtesy of his letter.*

Declined, with thanks, *Mr. D. C.—Examiner—Anti-Humbug—A Student of Bartholomew's—the Cases by Anatomicus,—and Mr. J. H.*

THE MEDICAL TIMES.

SATURDAY, AUGUST 5, 1843.

Timidi nunquam statuerunt Tropœum.

THE daily papers, in their report of House of Commons' business, give us a report of a question and answer of more importance to our profession than the majority of interrogatories put and and answered in that august assemblage. The following is the version given us in the *Times* :—

Mr. F. Maule wished to put three questions to the Right Hon. Secretary for the Home Department, first,—whether he had it in contemplation to grant a charter to the Royal College of Surgeons? next, if it were so contemplated, the right hon. gentleman had any objection to lay the draught of that charter before Parliament? and that whether, if the charter were granted, the right hon. gentleman meant it to be acted upon before the Government took up the entire question of medical reform?

Sir J. Graham, whose reply was nearly inaudible, was understood to say, that some charters were statutory and others granted by prerogative, and Parliament could only deal with the former. The one relating to the College of Surgeons was not statutory. The Government were about to review all the medical charters, but he could not give any assurance that the draught of any new charter which the Crown might be disposed to grant would be laid on the table of the house before it was confirmed. Such a course as this the right hon. member knew would be both unusual and unprecedented. Neither would he (Sir J. Graham) pledge himself as to what powers would be vested in any new charter which might hereafter be granted to the College of Surgeons.

We have taken the trouble to consult the whole file of daily papers, in the hope of getting a better report, or some clearer exposition of Sir James Graham's designs. All the papers give us varying versions, each version, however, marked by the same qualities of incertitude and ambiguity. In one or two, the Home Secretary is made to dissent from the views entertained by the College Council, and to express the opinion that if the College should have a charter—a matter spoken of very hypothetically—it should be one which would make it a mere local corporation; a kind of institution which, it is clear, would not exactly square with the exalted notions of most of the present Council. This report, however, is as doubtful as the rest. The contrast between the perspicuity of the questions, and the obscurity of the replies, is marvellous, and suggests *vraisemblance* to the speculation that Sir James—deeply as he is engaged to legislate on the subject—has not a definite idea on it. We are reminded, indeed, by the speech and the reports, of an amusing incident at an after-dinner match of Conservative oratory, that took place just before the passing of Catholic Emancipation. After the auditory had been warmed by speeches from no indifferent orators, the turn came to a gentleman more remarkable for his humour than industry, and from whom, on account of former brilliant displays, much was expected. The reporters had prepared fresh pens—the audience, after anticipating the next half-hour's coughs and hems, were hushed into the stillest silence—the expected orator slowly rose, uttered, " My brother Conservatives," with great animation — was the next moment in the depths of a sentence finishing with the only words that were heard of it, " invitation warm as the Conservative hearts it sprung from ;" and the stream of eloquence now rapidly flowed on for almost half-an-hour, with no other interruption than the rapturous cheers which followed the conclusion of every sentence. But what sentences ! There was a decent variety with regard to the length of time each consumed ; but, till the last few words, all was inarticulate sound, emitted in a most impassioned manner, with all the advantages of the most vivacious gesticulation, but finishing most distinctly and emphatically one, in, " Roast beef of Old England, gentlemen," — the second in, " Pillars of our glorious Constitution,"— a third, " The sacred claims of Church and State,"—another, " Monuments of ancient wisdom," and so on ; till having tagged, with some fifty clap-trap favourite phrases, as many oratorical emissions of unmeaning sounds, he sat down amidst the most rapturous applause of all those who sat more than a yard away from him. The next morning the journals appeared, and after explaining that Mr. —— was at times inaudible from the interruptions of applause he " so deservedly received," went on to fill up half-columns apiece, with their varying versions of his " much admired " speech !

Now, Sir James Graham, we suspect, has been enacting some similar part. Mr. Fox Maule's questions placed him in as unfortunate a position as reputation for eloquence had done our friend. He was obliged to open his mouth when he had nothing to say: and as he knew that " prerogative" and " charter," " statutory enactment," and " corporate privileges," had something to do with the matter, he avoided committing himself to nonsense, or as the House calls it, " a deliberate opinion," by just ringing the changes on them. The reporters, of course, did the rest. Certainly, very certainly, the *non*-hearing of the speech, by some of the Press Mercuries (and they don't want ears), and the contradictory reports of all, and the known facetious character of the Home Secretary, give much consistency, not perhaps to the Hon. Baronet's notions, but to our supposition. It must be admitted, however, that one idea seems to have been expressed by Sir James Graham. " It would

be unprecedented to submit the draught of a royal Charter to the House of Commons." This constitutional opinion may, we think, be very safely denied; but, supposing it correct, we see no inference why there should not be set such a precedent. We think the worthy statesman has mistaken the temper of the day and age, if he supposes we are indisposed to do the reasonable because the reasonable has never been done before. A Royal Charter to a public body is an affair of too much importance to be made a mere ministerial matter, only to be known when its grant is irrevocable. Such a course would place public interests in neither a secure nor an enviable position. Without directly flying in the face of law and legislation, it would directly supersede both. A band of individuals have only to join together under favourable circumstances, and by *one means or another*, to succeed in getting a charter to do as they list with any number of dupes or associates they may inveigle or compel by the force of circumstances to join them—and the fortunes and future fates of hundreds, it may be thousands, of deserving fellow-subjects, are, more or less, at their mercy. And if anywhere charters should be given with great caution, it must surely be in a profession like ours, which numbers so many thousands of educated gentlemen, and which depends so much for its utility to society, and happiness within itself, to the nature of its government. Our system of management may give us an education unworthy of our calling: it may rob us of every incentive to labour as students: it may misdirect the course of our application: it may, as practitioners, brand us arbitrarily with disparaging names, appellations subordinate to our rightful position: it may as arbitrarily give nominal distinctions to a select few, with no claim to them that science or society recognizes: it may make professional honours the gift of fortune rather than merit: it may ceaselessly engender, nurse, and amplify the spirit of dissension, jealousy, and discontent. In one word, our system of management may degrade our whole caste till it be its own curse, and its skill, which should be the blessing, made the bane of society. Shall that system, then, so potent for evil, so wide-spreading, so deeply penetrating in its power and influence, be hatched in secrecy—spawned in obscurity? —none present to watch its birth but the choice set who are not to suffer under it, but to rule and profit by it? We say—No: and, despite the "unprecedented" nature of the opposition, we shall not cease to cry out against any such management being imposed on us till we have examined into its nature, and had the liberty of marking in advance, if we cannot ward off, the parts of the noxious animal which are fated to hurt us.

But Sir James has clearly received injustice from the reporters. A hundred times sooner would we believe that he said nothing but inarticulate jargon, than that he uttered such nonsense as this deprecation of publicity. Publicity, the soul of justice, can ill be dispensed with when so much is at stake, and if the Home Secretary fears it, it says nothing for the purity, or goodness, or wisdom of the policy he would, but cannot, conceal. If we remember well, the provisions of the Factory Education Bill were kept secret till the last moment. Without uttering an opinion on the merits of the measure, we may say that the resulting fate of the concealment offers to one who likes to keep precedents in his eye, one worthy to be thought on as a warning.

The Home Secretary, it would appear also, is sensible enough to think it reasonable to give a body of men a Royal Charter *before* —yes, *before*—Parliamentary measures of a national character are considered, which involve essentially every point the charter can make reference to. Now, what is this but an insult to common sense, and a daring defiance of the jurisdiction of the House of Commons? It is positively predeciding the question that they are to deliberate on. For a Minister to give a *public charter* of *national influence*, without consulting those whom it principally interests, or laying it before the country, is foolish and despotic enough—but to grant this Charter on the eve of a day when the assembled wisdom of the nation is to deliberate on, decide, and definitively settle every matter the Charter pretends beforehand to fix, is, to our mind, little less than madness. It is conjuring up a royalty in a Minister—a royalty that anticipates and over-rides Parliament, and insults the country as if it were a nonentity. And why? To meet the wishes of a few over-vain, and yet further aspiring, surgeons of fortune in power in Lincoln's-inn Fields! Was design more preposterous ever nursed by a diseased brain? Parliament will be at liberty to legislate, but their legislation must not affect the Minister's Charter: and, thus, large interests are to be made to modify themselves to small—men adapt themselves to things, not things to men—the largely expedient and just, yield to the temporarily convenient—and imperial law-making and national interests, fit themselves to the modest wishes of a flattered Minister and his twenty-one flattering petitioners.

There is surely some mistake in all this. If Sir James Graham really has intimated any such nonsense,—to us, who believe him not to want the tact necessary to escape the *deliberately* ridiculous, it is only proof that he knows as yet nothing of the facts of the question he is to legislate on, and is without a single definite notion as to the true nature of the duties he has imposed upon himself. We beseech him, therefore, for his own character, as for our and the public's interest, to commit himself to no further step without the fullest consideration. Medical Reform is not a question of easy solution. Two or three political celebrities have in succession essayed it, only to abandon it with impaired public reputations, thankful that they were not further compromised. It is a Gordian knot which will never be untied by a man who thinks of unloosing it under the directions of the priests watching it, whose interest it is to make its entangled curiosity eternal. It must be the deed of a man who can escape the association of common notions, who can rise above vulgar prejudices, and know how to realise the aspirations of too long delayed justice, by daring to sacrifice to a permanent fame, and a general good, the complaisance one would wish to shew to the too nice feelings and *bienseances* of an interested few. We repeat it,—if the Home Secretary would avoid early, shameful defeat, he must give his whole soul to the work, and forget every feeling and tendency of the coward. If it be terrible to his courtesy and kindness to resist the overweening pretensions of the fifteen or twenty gentlemen of Lincoln's-Inn-Fields to-day, he will do well to ask himself if there will not be something still more alarming in having to face the bold antagonism of fourteen or twenty thousand of their brethren by-and-bye. No trimming, therefore, Sir James, or idle peddling. With Alexander cut the knot that can't be fingered into looseness; with the Roman Augur we repeat, "Cut boldly."

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 27th July, 1843.

For persons who wish to demonstrate anatomy without having recourse to the human body, the invention of Dr. Auzoux will be exceedingly useful. This ingenious physician has succeeded in making in wax an imitation of the human body, each muscle of which may be removed separately, so as to shew the different layers, the bones to which they are attached, the relation they bear to neighbouring parts, and the movements they produce when they contract. He has followed a similar plan for the internal organs, and by various sections is enabled to describe and point out the different parts of the brain, the eye, the ear, &c. He has likewise extended his investigations to the circulation, and to the nervous system, not only in man, but also in beasts, birds, fishes, reptiles; in short, to all created beings. In a series of preparations, he shews how, as we rise in the scale of animals, the brain increases gradually in size; how the anterior lobes become more and more voluminous as the intelligence developes itself, until, in man, we find them filling up the greater part of the cranium.

A case just published by M. Arnal offers a singular anomaly. A lady, 7 months gone with child, was seized suddenly with faintness, accompanied with violent pains in the loins: the abdomen became less prominent, an unusual weight was felt on the anus, and the movements of the fœtus were no longer discernible. The 4th day after the apparition of these symptoms, she was taken with slight shivering, and all the other characteristic signs of milk fever. On the 7th day, she was delivered of a still-born babe, which in all probability had been dead already some time, as it offered a slight degree of decomposition. The mother soon recovered, and six weeks after, catamenia appeared as usual. The author states, that he has observed three cases exactly similar. It appears from these observations that milk fever is not, as Professor Cruveilhier asserts, analogous to traumatic fever, but one produced by natural causes. Again, if experience confirms this opinion, the existence of the febris puerperalis will enable the medical man to diagnosticate, *a priori*, the death of the child.

A disorder hitherto supposed to be met with only in some parts of Italy, has lately been observed at the Hospital St. Louis. Pellagra, according to Moscati, Odoardi, &c., was unknown in Lombardy before 1715, beginning between the Po and the Alps, where it is now endemic, and gradually extending itself to all Lombardy, the Venetian territory, and the frontiers of Carniola. In 1755, Thierry described that disease under the name of *Mal de la Rosa*, which he had observed in Spain, and whose resemblance to the Lombardy pellagra was pointed out by Cerri, and M. Rayer. In 1786, Strambio, physician to the hospital of Legnano, founded by Joseph II., destined principally for treating patients affected with this malady, published a remarkable work on this subject. In 1818, it was observed in the south of France, and in 1819, Dr. Hameau described a disorder under the name of *Mal de la Teste*, endemic in the Arcachon, and which is a variety of pellagra. In 1834, M. Brieraede Boismont published a second edition of the memoir read in 1830, at one of the sittings of the Academy of Sciences, in which are consigned the different pathological alterations which he found on examining several persons who had died victims to the disease during the time he resided in Italy. Since then, M. T. Roussel, who has had opportunities of studying the disorder in Italy, has published a case in the *Revue Medicale*, which occurred at St. Louis: a second case took place in the same hospital in 1842; both of them terminated fatally. The third case is that of a man now under treatment, the disorder being now arrived at the second period. M. Theophile Roussel, in a memoir presented to the Academy of Sciences, thus expresses himself, "The description of the different diseases, known under the names of *Mal de la Rosa, Mal de la Teste, &c.*, prove that they are all varieties of pellagra, with a slight difference according to the climate, for they offer the same characteristic symptoms, are produced by the same causes, and exist under two forms,—1st, epidemic, in the mountains of Brianza, in Lombardy, in Asturia, Spain, in the heaths of Gascony, France: it was under this form that pellagra was first observed, the characteristic symptoms being highly developed: 2d, sporadic, almost throughout the whole of Italy; on the north side of the Alps, where it was seen by Bruniva and his pupils; in the centre of Germany; at Vienna, where Careni states, he saw three cases; in Spain, especially in Castille; among the poor in the environs of Paris (the three cases observed at St. Louis were inhabitants of the environs.) The only difference is in the intensity of the cutaneous eruption, which is easily explained, if the opinion of the Italian physicians be correct, viz. that insolation is one of the principal causes. In Spain, the erythematous patches, which gave rise to the denomination of *Mal de la Rosa*, are covered by a thick scab, and the disease seldom attains the degree of virulence it has in Lombardy, where they are hidden by scabs, and offer sometimes deep fissures. In the neighbourhood of Paris it is more benign than in Spain."

The internal use of nitras potassæ in arthritis, recommended in 1764 by Brocklesby, in 1772 by Macbride, and in 1774 by White, was, like all remedies, after having had its day, completely forgotten. M. Gendrin, in 1832, determined to try its efficacy, and found that it might be administered with great advantage, and without being preceded by bleeding. M. Martin Solon has, since then, constantly employed it at Beaujon, and with equal success, even when arthritis was complicated with endo-carditis, or peri-carditis. The dose is from ʒss. to ʒj per diem, increased gradually to ʒiss. and ʒij, in 6 pints of lemonade, or any other phthisanc. It acts first on the skin, producing copious perspiration, then on the urinary organs, and on the heart, whose pulsations diminish considerably in number. The intestinal tube is but slightly affected, there being seldom more than two or three stools in the 24 hours.

Contrary to the general opinion, M. Jules Guerin says, that in the treatment of rachitis, the diet should consist principally of substances easy of digestion, and that tonic medicines, and an exciting regimen, ought not to be recommended. Two or three baths a week, with the addition of from ℥ij to ℥iv of common salt to each, are useful.

Dr. Junod's invention, called by him *hemospasia*, is worthy of the attention of the profession. It consists of a species of pneumatic machine, so made as to be adapted to a limb, or even half the body. The vacuum produced by the instrument, causes the blood to flow rapidly to the part contained in it, and consequently decreases its quantity in the other organs. During its action the face becomes paler, the pulse slower, nausea, involuntary stools, and even lipothymia, or syncope, may take place. Its power is such, that one patient said he felt as if *he had no more blood*; another, that it was *stronger than* 10 *mustard foot baths put together*; a third, that it seemed *as if his life was about to leave him by his feet.* This method is chiefly useful in inflammatory disorders, when bleeding is impracticable, on account of constitutional weakness, or in patients reduced by long disease, or copious venesection. It is in such cases that it is of great importance, as by its means the blood may be drawn from the inflamed organ to a distant part, without depriving the system of its influence in restoring the lost strength, and in rendering the period of convalescence much shorter. As to the truth of the supposition, that on the removal of the machine the blood in rushing back may produce congestion in some important organ, it is altogether unfounded, for experience has proved that this liquid being accumulated in the capillary system, and the cellular tissue, can only return slowly and gradually. In conclusion, I will, as Dr. Junod himself recommends, advise all impartial persons to try ere they judge.

Academy of Sciences.—Sitting of the 24th July.—M. Raciborski addressed the second part of his memoir "on the Physiology of Menstruation." The first was read by him at the sitting of the 17th July. The conclusions were the following:—

Of the first part—1. That menstruation is produced by a certain condition of the vesicles of Graaff.—2. That these follicles exist at the child's birth, and increase gradually in number and in size, according to the activity of the vital powers, and the diet to which it was subjected during the first years of its life. Their complete development is indicated by the apparition of the menses.—3. That as soon as the follicles become atrophied, menstruation ceases; this takes place not only when atrophy is produced by age, but likewise if the ovaria are removed, or if there exist a disease capable of affecting the follicles of Graaff.—4. That as Coste, Carus, Valentin, Wagner, &c., have justly observed, not only the human embryo is contained, as in birds, in an egg; but that women, as birds, fishes, reptiles, &c., are subjected to a periodical laying of these ova, and that this takes place spontaneously, without the intervention of the male. The same phenomenon may be observed in all the different classes of mammalia, except the mule, in which animal the follicles of Graaff do not exist.—5. That at each catamenial flux a follicle appears on the surface of the ovarium, bursts and disappears. To accomplish this it is not necessary, as Graaff and Haller asserted, that there should be excitation caused by coitus.—6. That the catamenia appear to be the result of a congestion of blood towards the internal genital organs, produced by the development of the vesicles of Graaff.—7. That the separation of the ovum appears to take place almost always at the time of the menses.—8. That the corpora lutea, produced by the bursting of the follicle, offer the same anatomical characters whether there be fecundation or not.—9. That the colour of the corpora lutea is not uniform, and, therefore, the denomination is not correct.—10. That as soon as a follicle bursts, it disappears, and another replaces it.—11. That the disparition is effected gradually, by the contraction of the external envelope of the ovarium, according as the blood contained in the follicle is absorbed.—12. That disease arrests the development of the follicles, and that amenorrhœa in certain cases, ought to be attributed to this cause.—13. That it is possible on inspecting the ovaria to decide if the woman had died of an acute or chronic disorder, and if catamenia had taken place during the last months of her life.—14. That the ovaria do not act by turns, and that the moment of their entire development cannot be fixed. The conclusions of the second part are to prove the analogy, which exists between catamenia and the epoch in which animals experience the desire of the union of the sexes.

Academy of Medicine.—Sitting of the 25th July.—M. Leon Marchand read a memoir on the pellagra observed by him in Gascony, with paintings indicative of the different stages of the disorder. The symptoms may be classed as follows:—1. Affecting the skin.—2. The digestive organs.—3. The brain and spinal marrow.—1st. The skin offers a bright red colour, similar to that of scarlatina or crysipelas, with or without swelling, itching, crevices on the fingers, back of the hand, &c.; at other times the parts are quite smooth as after a burn.—2nd. The digestive organs:—The lips and tongue are covered with painful crevices; ptyalismus; deglutition sometimes difficult; pain in the epigastrium, anorexia; finally an abundant serous diarrhœa.—3rd. Brain and spinal marrow:—The different senses, both internal and external, become weaker and weaker; succeeded by idiotism and a disposition to commit suicide, generally by drowning. Fever accompanies these symptoms, and the catamenia are frequently suppressed; there is likewise a sense of warmth from the top to the bottom of the spine. One *post-mortem* examination only was performed, and in this case there was evident proof of chronic inflammation in the brain and intestinal canal. As to its causes, it ought principally to be attributed to bad food, insolation, acting on persons predisposed to contract the disease. The treatment consists principally in a proper diet, baths, &c. The disease attacks men and women in equal proportions, very rarely children; and offers a peculiarity, viz.—its periodical apparition; the symptoms appear in the months of March or April, become more and more intense during a space of forty or fifty days, and then gradually decrease until September, when they disappear, to come on again the ensuing spring, increasing every year in violence, until the patient either commits suicide, or is carried off by hectic fever or dropsy,

M. Renaud, Professor at Alfort, presented several preparations in order to prove that the *morve* (*glanders*) exercises its action, not only on the nostrils, but likewise on the trachea, mouth, liver, and lymphatic glands.

GARLAND DE BEAUMONT, D.M.P., B.L. & S.
Honorary Physician to the Spanish Embassy, &c. &c.

MESMERISM IN PARIS.

(FROM ANOTHER CORRESPONDENT.)

Paris, July 26th, 1843.

The last number of your Journal contains a long extract taken from a recent work by Edwin Lee, Esq., on the subject of animal magnetism. I should have allowed this to pass in silence but for your comments on the subject, which seemingly tend to encourage further enquiry.

I have had the advantage of seeing a very large number of mesmeric experiments; some in London, by Dr. Elliotson, and others in Paris, by Messrs. Ricard, Lafontaine, some female magnetisers, and subsequently by M. Mareillat. I have witnessed so much diversity in the results at different times, that for a very long period I remained a passive observer, neither able to believe, nor inclined to disbelieve, much of what I saw. My object has been to discover the truth, determined not to take anything for granted, but at the same time *fairly*, and with as little prejudice *as possible*, to observe facts, and be guided by them alone. I never magnetised any one: I do not know if I could do so, neither do I wish to be thought a supporter of this strange science, *if science it be*. I have submitted myself more than once to M. Lafontaine's manipulations, desirous to be thrown into the magnetic sleep, but without effect. I have refused to see nothing that could throw light on the matter, but latterly have rather lent myself to all that was calculated to elucidate the subject, for I consider it equally unphilosophic to *reject* that which can be demonstrated, as i would be to assume what cannot be proved.

When I became thoroughly convinced of the truth of certain mesmeric phenomena, and that some unknown power, was excited between certain individuals, I set about to endeavour to discover whether or not this influence, exerted in certain cases, could be turned to any useful account, and for this reason, I invited M. Lafontaine to try it on some of my patients, who were past relief by ordinary means.

He has successively visited with me cases of paralysis, cerebral congestion, deafness, &c., and in no one case have I seen any decided effect. It should be stated, however, that it has so happened that most of those persons were not susceptible of the mesmeric influence, or but very slightly so. I was encouraged to do this by a case narrated to me by persons on whom I can rely, and this is the only instance I have yet seen in which M. Lafontaine has done good, although he occupies himself exclusively with magnetism for that purpose, and I believe him to do so conscientiously. The case is that of a young lady, who, at the age of 2½ or 3 years, became deaf, and consequently has been dumb. Her deafness proceeded from measles, or scarlet fever, (I do not at this moment remember which.) She had been taken to many physicians, both in London and Paris, none of whom were able to benefit her.

M. Lafontaine undertook the case some 10 or 12 months since, and at the 4th *seance*, she recovered in part her hearing, although she is now 11 years of age. M. Lafontaine has been magnetising her, more or less, frequently ever since. I have seen her several times lately, and can bear testimony to the fact, that she now not only hears *well*, and I should say, as well as other people, but articulates tolerably well also; indeed, she can speak freely, and is remarkably quick and intelligent for a child of her age. Whether this case is to be solely, or in part, attributed to magnetism, I know not, but the history of the case is such as should warrant the conclusion. From the trials, however, I have given M. Lafontaine, and the cases, with this one exception, that I have seen at his house, I am inclined to think, that magnetism will not be found of any service in medical cases.

The insensibility which may be induced in some individuals, may, I believe, be made available in surgery. But to return to the more curious part of the subject.

The young man Alexis, magnetised by M. Marcillet is wonderfully astonishing. The whole of the experiments recorded by E. Lee, Esq., and given in your last week's Journal, are nothing more, but rather something less, marvellous than I have witnessed myself.

Last evening he was magnetised before a party of 15 or 18 persons, in the house of a lady with whom I am acquainted. He became so lucid, that with few, *very few*, exceptions, he answered every question, and solved every difficulty that was offered to him, and certainly would have convinced the most incredulous person.

He first played écarté as usual, with his eyes covered, and in the same quick manner as he is accustomed to do, foretold the result of the game, I mean before the cards that were dealt have been seen by any one; with the same facility he picked out of the pack any card that was called for, whilst they lay on their faces, and pronounced without one mistake what the cards held by his adversary were.

He then had books presented to him, which he read without much hesitation, placed before him in any way,—for instance, upside down, and what was very remarkable, he read the top lines of several subjacent pages on either side of the leaves, which, of course, must have been read from right to left, and from left to right—a thing others would find quite impossible on a substance as opaque as the thick leaves of such books as were given to him. A handkerchief was then placed over the open page, but he read just the same. Some gentlemen then wrote on scraps of paper, and folded the same several times—these he read likewise.

Several small objects of ornament were then enveloped in sundry pieces of paper, which he described with incredible accuracy. Even the inscriptions on small rings, although the rings were wrapt up in thick paper, he also read. He was then requested to *tell* one of the ladies present what complaint she was suffering from, and what would be of service to her in order to get better: he answered immediately, when she was put *en rapport* with him, and *in a very knowing manner*, "that it was useless his speaking to her, as she was deaf, and would not hear him." The fact is so: the lady is too deaf to hear any moderately loud conversation.

He then pointed out to several ladies present, the pains and aches they were subject to; and, lastly, he described the respective dwelling-houses of others who questioned him on the subject; and one lady in particular he told where she had been, and whence she came, but did not succeed in naming the different parts of the world correctly where this lady had resided, but he told her how long she had been married, and many other singular coincidences which had happened to her during her travels.

With the exception of colours. in which he frequently erred, he described apartments in which he certainly had never been, with the nicest accuracy, and in minute detail.

Many other things, far too numerous for me to mention, and much too marvellous to be credited by any one who had not seen some of these supernatural doings, were told by Alexis. I have often seen him fail to accomplish what at other times he would do readily, but I never saw him so lucid as in this instance, making but very few mistakes, and those, too, but of minor importance.

This, Mr. Editor, is but a brief, although correct, statement of what took place in my presence last evening—phenomena which are perhaps more curious than useful, but which, from their very strange nature, may probably have the effect of making some persons more reserved in forming opinions, at least without an examination, and in preventing others turning a deaf ear to what may eventually prove to be true. What may be the ultimate effect of this, as yet, unknown power (magnetism), and the resulting consequences on society, I am at a loss to conjecture; but I regard them with fearful apprehension.

In a scientific point of view, it becomes a matter of great interest. Many of these magnetic phenomena certainly are true, and true, too, on grounds strictly scientific: there is, however, much of it imposition; of this I am equally convinced—and from the very general manner in which it is now practised in Paris, by all descriptions and classes of persons, I think it is calculated to do an immense deal of harm.

I am, Mr. Editor,
Your obedient and humble servant,
F. PACKMAN, M.D.

4 Rue Castiglione.

P.S.—I have given you a very hurried account of these magnetic doings, which are becoming of much greater frequency in Paris, with the hope that you will take further interest in the matter. I am no advocate for the practice of animal magnetism, but, I think, after much attentive observation, that it merits enquiry; and ought to be suppressed if no signal benefit is to be derived from it in a medical point of view. Its bad effects are too glaring not to be seen by every one, and, on this side the channel, it has become a plaything for young men and women.

F. P.

The Connection of Hemiplegia with Syphilis.—Dr. Budd some time in the course of last year drew the attention of the profession to the occurrence of hemiplegia in persons whose constitutions were impregnated with the syphilitic virus. Dr. Todd, of King's College Hospital, has also published a case of the kind, which terminated fatally. On examination of the body, one cerebral hemisphere was found to be inflamed, and the other the subject of red softening. Since then, Mr. Inman of the Liverpool Infirmary, has published five cases, in illustration of Dr. Budd's observations. They tend at least to shew a coincidence of hemiplegia with syphilis, if the latter be not the cause of the paralysis.

REVIEWS.

A Medical Visit to Gräfenberg, in April and May, 1843, *&c.* By Sir Charles Scudamore, M.D., F.R.S., &c.

Whether it be from a lack of natural ill-feeling, or a profuse experience of good fortune, we will not say—but we, yes, really—*we can* look with a feeling of pleased interest and picquant gratification at the ingenuity and perseverance exhibited by many of the more clever and erratic of our brethren, in conquering a practice and forcing a position in professional society. They are not plodders: the dull routine of industrious drudgery, by which the mob professors of our art reach competence and old age, is not the one they can travel through. They have more of the *race* than the *mill*-horse in their composition, and if the object of their ambition were to be reached by a bold, rapid dash, they would form the uncontested aristocracy of the profession. Conscious by repeated failures (which, luckily for them and us, never disheartens the true breed) that mere cleverness, of the kind we have described, is not alone sufficient, they learn at length that as no drug is a remedy which is not made so by its "*timely*" application, so no talent is a serviceable one which has not the adjunct of exterior favourable circumstances. They are great watchers, therefore, of the course of events—or, as a political authority has it, great "waiters on Providence." They are ever nicely marking the phases, changes, tendencies of the public mind,—ever on the *qui vive* for the new, the grand, the striking, or the wonderful; and their eyes, like the poet's, in a fine phrenzy rolling, are ever turning, not from earth to heaven, but from man to earth, and earth to man, to see if in any corner of the globe a something might not be transpiring which would help them to claim men's attention with a good grace, and effectually enable them—*to raise the wind.*

Formerly a book, especially a medical one, carried some proof of industry and knowledge as regarded the author. Time, so wonderful in its mutations, has made the inference now run so much the other way, that it seems odd that our fathers could have entertained the notion. A book is now the spasmodic effort of a few desperate hours of a man who writes, not because he has anything to *say* for the public, but something to *do* for himself. It is the effort of a sharp man who supplies the want of industry by cleverness, force by astuteness—and who, not having the perseverance to deserve men's support by *serving*, possesses himself of it by *hoodwinking* them. A book is to the physician what false colours are to the pirate—what "selling off" placards to the cheating trader. It is aimed directly at men's pockets; levelled straight at their cash-boxes. It has no other beginning or end, aim or object,—and while always identical in these, is yet as multiform in *manner* as the game for which the trap is laid. Sometimes 'twill be planned for the select few who have at once woes and wealth, and then it will be labelled, "On Gout," or "Tic Doloureaux." Again, your idle loungers at watering places will be conspired against, and we have Protean Lucre assuming the shape of a treatise on every mineral spring or bath where a rich invalid may be found fretting away his existence. Anon, Laennec shall become a world's talk, and mid the bustling gossip in shall walk a new book under the modest title of Observations, teaching the astonished groups that a greater than Laennec is among them, if they have fees to dispose of. These wiles having their day and passing it, the large units of the

few shall be thought compensated by the combined trifles of the many, and suddenly the countless multitude of despairing and decaying consumptives are warmed into hope and liberality by another book on the remedial power of inhaled iodine and conium in phthisis. And last as yet—though not to be last—when, despite the curability of gout and tic doulourcaux, and the efficacy of mineral waters, and all-conquering virtue of iodine and conium, —people discover that they still die, the public mind is again examined, its tendencies caught, its wishes anticipated, and, as the marvels of hydropathy are tickling the populace's long and willing ears, *presto*, a book appears by which the more monied of them learn that there exists an orthodox physician (it may be with a title) who can gratify their caprice for the novelty while soothing their alarms on its danger, and give to the pretensions of dubious empiricism the *imprimatur* of the most approved legitimacy. And thus are books got up, practices established, money won, reputation made, and people taught, in the nineteenth century!

As every work should be considered in reference to the author's object in writing it, Sir Charles Scudamore would justly complain of us were we to treat "the book" before us as a contribution to medicine. He, doubtless, as much intended such a disposition of his ideas, as the ring-dropper means his brass gewgaw as a contribution to public honesty. Judged, then, by this lower standard, it gives our benevolence genuine pleasure to acknowledge that the book is a very good one in its way, and that if it miss its aim the fault will be much more the public's than that of the author.

Perhaps, from what our pen has so hastily thrown off, it may be surmised that we entertain a doubt on the sincerity of Sir Charles's present creed. The notion, however, is scarcely justifiable. The learned physician has suffered in the cause of hydropathy. His maxim might be, *experto mihi crede*. He has gone through the course he recommends to others. His pleasing form has been enveloped in the *lein-tuch*, or wet sheet—that has been closely surrounded from "the neck to the feet by a very thick blanket,"—that again, covered with a down-covered bed and quilt, till the earthly depository of his immortal soul resembled, as he tells us, "a compact bale of goods."* He has borne the *abreibung*, or rubbing wet sheet—the sweating blanket—"put his flannel waistcoat *over* his linen,"—had the wet bandage round his body—drank water in immeasurable gallons, suggesting the idea of locomotive pumps to the neighbouring insurance offices—"lay on the floor, and had a good proof of the superior conducting power of *air* over water for *sound*" † (is this a joke?) —tried the experiment of "*laying* (!) in 3 wet sheets instead of one" ‡—lain in "the sweating blanket" cured "a slight general fever, rheumatic pains, and severe throbbing headache," by "the *lein-tuch*, followed by the shallow tepid bath, and two effusions with cold water," *in 24 hours;* and finally, *through hydropathy*, delivered himself, in *thirty-two days*, of "inconvenience from rheumatic and nervous headache, with noises and deafness in the left ear, and a dependence on medicine for the function of the bowels, the latter seldom requiring *active* treatment." Sir Charles, it is obvious, therefore, has practised what he preaches, and if his book do get him patients —as we hope it will—and if, as he earnestly prays, a Hydropathic Hospital be built, and he appointed its first physician, we hope the singleness and sincerity of his new faith will not *therefore* be contested;—for such a noviciate, so heroically passed through (and by Sir Charles Scudamore, too!) places the genuineness, if not the wisdom, of his new opinion far beyond a doubt. If he get the kingdoms of heaven he is fighting for, he will have the consciousness of having suffered for it.

* Page 7.—† Page 35.—‡ Page 35.—Page 32.

If the analysis of this visit be of any interest to our readers, it is soon given. The preface intimates that curiosity was the visit's impelling motive, and solicits unprejudiced attention from the reader. We have then a short SKETCH OF PRIESSNITZ:—

Of Priessnitz himself I shall say a few words, and describe my impression on first seeing him. His countenance is full of self-possession; rather agreeable; mild, but firm in expression; with *an eye of sense*, and a pleasing smile. The small-pox, and the loss of some front teeth from an accident, impart his good looks. His manners are sufficiently well-bred. On closer acquaintance, you discover that he is quick in perception; is reflective; prompt however in decision; simple, and clear. This might be excepted; for his path is short and direct, having his vast experience for his guidance, and no principles of medical knowledge to reason from, beyond those which he has learnt from a long study of the book of nature.

He inspires his patients with the most entire confidence, and he exacts implicit obedience. In this he is right, for on no other terms can success be obtained. He could not carry out his views of treatment, if the invalid were unconfiding or impatient. The accidental manner in which he entered on the practice has been fully described by none better than Captain Clarige, whose ingenious work was the first general announcement of Hydropathy in this country.

From Jan., 1839 to Dec., 1842, Priessnitz has, according to the published records exhibited at Gräfenberg, treated 5422 patients. The lists commence from 1829, and in that year the number of patients was only 49. Their rapid increase, and the ever rising popularity of this remarkable man, attest the success of the practice. Previously to 1829 he began his treatment with the neighbouring peasantry, and to this humble class he is now always ready to give his charitable help in baths and alms. In further proof of the high estimation of the water-cure treatment in Germany, I learn, from good authority, that there are now no less than fifty establishments in that country.

Priessnitz has formed his complete system by slow degrees, and has shewn, certainly, very great ingenuity and an inventive genius in many parts of his plan. In all, there is method and good sense. His tact in varying the mode of application is remarkable; and in adapting his treatment to the particular individual, and to the varying circumstances of each case, he displays equally *reflection and judgment.*

We have then an odd paragraph full of sentences, each one undoing a preceding one. The cold water system has even failed to make Sir Charles a consistent reasoner. He here treats contradictory, as if they were mutually supporting propositions:—

Some acquaintance with anatomy; with physiology, or the laws of the animal œconomy; with pathology, or the knowledge of various diseases; and more especially with good diagnosis; would surely be an advantage to him to possess, if it could be given to him as a superstructure on the foundation which he has built for himself. He never could have made such discovery of the powers of water, if his thoughts and attention had been divided with other studies. It is truly surprising in how eminent a degree his experience and ready powers of observation do supply the absence of regular science. Let it not, *however*, be supposed that he does not reason upon every case that comes before him. The able discrimination which he makes, sufficiently proves his good sense and his judgment.

This is his description of the sweating blanket:—

The whole body, including the neck, is most carefully and accurately invested with the large thick blanket, and the packing finished with the feather bed and wadded counterpane. If the patient be liable to pain or congestion of the head, a wet bandage to it is proper, either in the first instance or in case of feeling such inconvenience during the process. Those who are slow to perspire are instructed to move the hands and feet in a quick shuffling manner. More blanket covering may be required. If the feet are difficult to be warmed, I advise flannel socks. The first of the morning is to be preferred, when the digestion of the food is over; but if success in perspiring cannot be obtained, the afternoon, immediately after warming exercise, must be chosen. Sometimes, four or more hours are passed before perspiration breaks out. When taking place freely, the patient may have cold water offered him as drink occasionally, and fresh air admitted into the room. The period for carrying on the perspiration is prescribed; and when terminated, the use of the tepid shallow bath, solely, or previously and also subsequently to the cold plunge bath, succeeds. It is only the practised patient who goes at once into the cold bath; but, with either, it is a rule, first, to dash some water over the face, head, and chest. The envelope of the blanket, in the progress to the bath, is so exactly close that there is not the least exposure to cold. If a cold plunging bath cannot be had, the best substitute is the shallow bath and cold affusion from small buckets; one or two, or more, affusions being used, according to circumstances. In the excited state of the circulation, with a heated and perspiring skin, the transition to the tepid or cold water is made with perfect safety; so much elevated is the animal heat. Dr. Currie shewed the safety of cold affusion when the animal heat was raised above the natural standard, which may be stated at from 94° to 98°, varying in different individuals; but as an average, 97° in health.

While lying in the blanket, so entirely excluded from the air that no radiation of caloric can take place in this non-conducting medium, the animal heat is always more or less raised, the vital force is stimulated, the pulse becomes fuller; and there is a sort of temporary fever. Hence, in inflammatory disease, or even in persons of very full habit, if laboring under any congestion, there may be too much tension or irregularity in the circulation to allow of this treatment. If perspiration were not produced, disadvantage would follow. I have made numerous examinations of the animal heat under this process. I will now give an example. A. B. temperature at the tongue (the bulb of a delicate animal heat thermometer, lodged in the tongue by the frœnum, and steadily held), 15 minutes before going into the blanket, at 4½ a.m. the patient then in bed, 98°; when in the most heated state before the breaking out of perspiration, 100°; ditto when fully formed; after much perspiration, 99°; after returning from the plunging bath, 97°.

The sweating in the blanket is a different result from that produced by the vapor bath, and is a far more favorable process than it for the after-treatment of the cold bath. In the use of the vapor bath, the stimulus of heat is more derived from without: the skin becomes as it were fomented by the hot vapor, and relaxed; nor can the temperature of the whole body by any management be so equally maintained as in a blanket; in which, heat is brought to the surface from within by the exertion of the vital force, and suffers no check to its uniformity. I am not of this opinion. Lately, I knew an instance of a female receiving a shower bath at 70° immediately after being subjected to steam at 100° for twenty minutes. In the short interval, evaporation had rather cooled the surface: there was an absence of reaction, and a severe paroxysm of fever followed.

Priessnitz does not employ the sweating blanket so much as formerly, having a great regard to the strength of the patient; yet when he can reckon on this with confidence, and always when he has it in view to elicit from the system any old morbid virus, or extract latent mercury, he does not hesitate to use this treatment, and freely. None undergo it more than the gouty class of invalids,

The following are the author's views on water, and the drinking of it:—

In the formation of any hydropathic establishment, water, as to its quantity and its quality, must be the first consideration. It should be pure as Nature ever presents her streams; and abundant, so that the supply for douches and plunging baths may be most free and constant. The drinking of a large quantity of water daily, unless of great purity, would be calculated in every way to produce injury. We will consider its use when unexceptionable in quantity. At first sight, it might perhaps appear a very innocent proceeding, at least, to drink of Heaven's best beverage without restraint; but there is a wide difference in taking water copiously to relieve thirst, and to swallow it, by prescription, in a compulsory manner.

The average daily quantity first directed by Priessnitz is from eight to twelve glasses, the glass holding from ten to eleven ounces, as it is usually filled; and twenty ounces are to be reckoned for the pint. He commonly says to his patient, "Do "not oppress your stomach, although I wish you to drink as "much as you can conveniently." The largest quantity is always taken before breakfast; and it is most surprising to witness the enormous amount which some will swallow. But with this, they will take active walking exercise over the mountains for two hours. None should be drunk while the body is very cold; and never in much quantity, unless exercise be freely taken. Nor only would the sedative action of large draughts of very cold water on the stomach be very unfavorable, but also it would cause a temporary fulness of the blood vessels, that might be attended with serious consequence; as I shall relate cases to shew. The second time of drinking freely is between breakfast and dinner: during dinner, moderately; none for some time after; and, to make up the prescribed quantity, as may be most convenient. In the morning early, the water has an obviously useful effect in clearing the stomach by free dilution, downwards in general; but, when there is disorder, acting for a time usefully in causing a discharge, by eructation or easy sickness, of acrid matter, acid, greenish, or yellowish. It promotes the action of the bowels; and is the greatest agent, with the rest of the treatment, in superseding the the necessity of aperient medicine, however habitually it may have been used. Its free action on the kidneys renders often much benefit by diluting the urine usefully; and, instead of causing distress to the bladder, even should its mucous membrane be in a state of chronic disease, it produces great relief to its function. Further in unison with exercise, it tends to produce salutary perspiration. At the dinner meal, in moderate quantity, it very notably assists digestion; far more happily indeed than fermented liquors. At Gräfenberg, water and milk are the only fluids drunk. The advantages of drinking water in the way I have now mentioned are indisputable, if the quantity be confined within certain bounds; but the excess committed by many persons at Gräfenberg is a matter that calls for the strongest criticism. It is easy to point out what would be the safe and proper medium, but more difficult to define the quantity that tends to certain injury. This also must be relative to many circumstances. It is, however, a subject of so much interest and importance, that I cannot refrain from giving it further discussion.

Water derives much of its tonic quality from its degree of coldness. I should wish to find the spring, even in summer, under 50°. In the interesting conversation which I enjoyed with Liebig (for an account of my visit, see Appendix), I learn his opinion on the use of drinking water in the water cure. He considered the purity of the water to be of the utmost consequence; that its quick absorption would not otherwise take place; and, if having two per cent. of saline matter in its composition, that it would pass to the bowels; but if of proper purity, then that 8.10ths would in the shortest time pass off by the kidneys: and when this happens, and the patient does not experience the smallest oppression, a large quantity may be drunk without harm. Spring water, such as I am describing, has, in the atmospherical air which it contains, 33 per cent. of oxygen; that of the atmosphere having only 21; and hence the Professor thinks, as I understood him, some of the advantages afforded. I remarked to him that in the most dilute urine, I found the evidence of saline matter, and that litmus paper was distinctly reddened, and asked him if he thought that any injury would arise from such a free carrying off of the salts of the blood? He thought that the compensation would be easily made by the use of the salt in the food; which might be a little increased with reference to this point. He could not help entertaining the idea of a shorter course from the stomach to the kidneys, than by the general circulation, so very immediate is the absorption of pure water. I submitted to him that I did not think this explanation necessary: for in the absorption of chyle, that important fluid does not become blended with the blood till after many rounds of the circulation; as we see demonstrated by the chylous appearance of the serum of the blood, when drawn some considerable time after the dinner meal; and as the water is wholly innutritious and not required by the blood, its passing away immediately might be expected. I observed to him that I did not think it probable that the constitution of the blood would be changed, in regard to its relative proportion of water, which has been estimated at from 90° to 95° per cent., by the introduction of so much drink; and that we must not argue of the influence of the water on the blood in the living vessels, by what takes place in an experiment made on that in a basin. He appeared to coincide with me in opinion.

Yet I am persuaded that a temporary plethora of the circulation is produced by the large ingurgitation of water, and that, without exercise, inconvenience would follow; but when half-pint draughts are taken, with intervals filled up by active exercise, attended with a ready and efficient action of the kidneys, a great quantity may be drunk with impunity; and especially when the patient is sensible of pleasure from it rather than the contrary. However, such is the consequence of a temporary filling of the vessels, that I should always object to a large quantity of water being drunk in any case of hæmorrhage, that ought to be restrained rather than promoted.

Even in hæmorrhoidal discharge, if the blood be arterial, it requires prudent consideration to determine the extent to which it shall be allowed to go; for it is not as with venous blood, in the flow of which Nature may be left to herself; but much bleeding from one or more arteries will in a short time depress the strength, and more or less impair the nervous energy.

As a general rule for the drinking of water, in pursuing the water cure, I would offer the following. The morning early is the time for the largest quantity: more between breakfast and dinner; a moderate portion only at dinner, for it would distend the stomach unfavorable, and tend to the dilution of the gastric juice; none till about two hours after dinner; and not much before going to bed. The *quantity* must have reference to many circumstances, and to none more than the activity of of the kidneys and the amount of exercise. I would propose, in regard to total quantity per diem, one quart as the minimum, and six or seven quarts as the maximum.

We have, then, short descriptions of the different appliances of water, and of the diet and exercise followed by the patients, with forty cases of cure by the water treatment. Gout, skin disease, a generally disordered system, seem to have been the general ailments of the cured patients. The cases are followed by some general remarks on the applicability of the water cure—on combining medicine with it—on the nature of its action, and in vindication of its action. We shall revert to these next week.

The Illuminated Magazine. Edited by Douglas Jerrold.

We have been favoured monthly with copies of this new magazine, and are so pleased with the excellent spirit, as well as abilities with which it is conducted, that we step out of our professional path to recommend it to all those of our readers (and are they not the whole of them?) who at once wish well to their kind and appreciate its *second* of distinguishing excellencies—*genius*. The magazine is, what all writing should be—and so rarely is—"illuminated" by whatever gives glory and usefulness to literature.

Statistical Report of One Hundred and Ninety Cases of Insanity. By S. Hare.

This is a paper of little value by itself, from the comparative paucity of the cases; but must be serviceable as furnishing data which, added to other and more extended reports, may lead to deductions most important in reference both to the treatment and prevention of insanity. The main facts are—that, of the admissions, 56.02 per cent. was the proportion of males, 43.97 of females—that the admissions were about one-third more in the summer than in the winter months—that those with friends insane, stood as 48 to 75 who were without relatives insane—that considerably the most common age for admissions was from 31 to 40, taking years decennially, but that from 21 to 30 was the more common period fixed for the beginning of insanity: that in reference to marriage—the married were as 50.60 per cent.; the single, above 21, as 34.33; widowers and widows as 7.83; the insane wives being about one-half fewer than the husbands. The other facts are so little likely to offer any guide as to relative proportions in the aggregate, that we must pass them by, with the expression of a wish that Mr. Hare's commendable example may be generally followed by those having the control of similar institutions.

The Pharmaceutical Journal (August.)

The number for this month contains no article of importance, if we except, perhaps, one on a new solvent for stone in the bladder, by Mr. Alexander Ure. The agent is carbonate of lithia, which is a constituent of several German waters that are known to possess some efficacy in some diseases of the urinary organs.

Carbonate of lithia dissolves in water at the ordinary temperature of 60° Fahr., to the amount of one per cent. From its sparing solubility it may be said to form the connecting link between the earths and alkalis. It possesses a faintly alkaline by no means unpleasant taste. No opportunity has yet been afforded me of ascertaining whether it passes through the circulation unchanged, although analogy would lead to the supposition that such was the case. It has a remarkable affinity for uric acid, so much so, that if finely pulverized *lepidolite* (a hard siliceous mineral containing three or four per cent. of lithia) be boiled along with uric acid in water, urate of lithia is formed. A fact pointed out by M. Lipowitz, and which has been lately verified by myself.

According to the chemist above mentioned, one part of carbonate of lithia dissolved in water and and boiled along with an excess of uric acid, dissolves four parts of the latter, which are held in solution after cooling. Urate of lithia is indeed the most soluble salt which that acid forms. It crystallizes by evaporation in the shape of small grains, which require sixty parts of water at the temperature of 60° Fahr. to dissolve them. It contains 14.4 per cent. of lithia.

Mr. Ure has made various experiments with this solvent: one of these is thus given:—

A human urinary calculus, composed of uric acid with alternate layers of oxalate of lime, having been most accurately poised, after being previously brought to hygrometric repose, by digesting in fresh urine and then carefully dried,

was placed in a solution of four grains of carbonate of lithia, in an ounce of distilled water, and steadily maintained at a blood-heat by means of a water-bath, during five consecutive hours. On being withdrawn, nicely washed, and again dried as before, it was found to have lost five grains in weight, which is at the rate of one grain an hour. The calculus is deeply eroded in different parts, but the delicate laminæ of oxalate of lime remain intact, imparting to the surface the appearance of deep etching. The menstruum acquired a pale yellow tinge, and there fell down from it on cooling a light flocculent deposit of urate of lithia, in which silky crystalline tufts could be discerned by help of the microscope. It was still alkaline to litmus. Decomposed by means of hydrochloric acid, it yielded nearly three grains of pure uric acid. In another experiment, the remaining half of the same calculus being allowed to stand during four hours in two ounces of the natural Vichy water, from the spring called *Hopital* (containing three grains and a half of carbonate of soda), was found to have parted with two-tenths of a grain of uric acid; while the former portion of the calculus, placed under precisely similar circumstances, at the same time, in a solution of 1.6 grains of carbonate of lithia to two ounces of distilled water, afforded nine-tenths of a grain of uric acid. Thus is demonstrated the very superior solvent agency of the above feeble lithia solution over the Vichy water.

Mr. Ure mentions that when fresh healthy urine is rendered alkaline by carbonate of lithia, no deposition ensues. His concluding remarks are worth quotation:—

A very large proportion of the stones which occur in the urinary bladder of man, are composed in whole or in part of uric acid. Of all the various menstrua hitherto recommended, none appears to promise more favorably than the carbonate of lithia, from the promptitude and energy with which in dilute solution it attacks calculi of this description. If by means of injection we can reduce a stone at the rate of a grain or more an hour, as the above experiment would lead us to anticipate, we shall not merely diminish the positive hulk of the calculus, but farther loosen its cohesion, disintegrate it, so to speak, causing it to crumble down and be washed away in the stream of the urine. Cases may present themselves in which it may be expedient to conjoin the use of the lithontriptor, but only occasionally, and at long intervals. It is the frequency of repetition which renders that instrument so hazardous.

It may be presumed, moreover, that the plan of throwing in a weak solution of this kind, would generally exercise a beneficial influence in obviating irritation, by removing the sharp angular points and asperities of the broken fragments, where the practice of crushing is adopted.

No apprehension need be entertained from the administration of injections, if judiciously directed. Sir Benjamin Brodie found that the bladder bore without inconvenience a stream of fluid composed of two minims and a half of nitric acid for each ounce of distilled water. An Austrian surgeon has recently introduced vinegar into the bladder, with excellent success, in an instance of phosphatic calculus. Mons. Lisfrane, the eminent French surgeon, has used in like manner tincture of cantharides for the cure of enuresis; and I myself have thrown a dilute solution of nitrate of silver into the bladder, with the best effect, in cases of chronic catarrh of that viscus.

Nothing has hindered me from trying the carbonate of lithia but its extreme scarcity. I would, therefore, suggest the importance of its preparation to the Pharmaceutical Chemist. The mineral called *spondumene*, which is found at Killiney, near Dublin, contains, according to Stromeyer's analysis, 5.6 per cent. of lithia. My best thanks are due to Mr. George Knight, of Foster Lane, and to Mr. Morson, for supplying me with the specimens of carbonate of lithia employed in the preceding investigation.

The editor gives us an article on the sale of spirits of wine by druggists. We learn from it that the druggists, not the commissioners have been in fault. The editor assures us that in all the cases known to him, the vendors have known that the spirit sold was not for medicinal use: and adds that the quantity sold has, in most instances, been a pint and a half. This is a frankness in Mr. Bell not stipulated for, we suspect, in his engagement as the druggists organ: it ought certainly to keep the commissioners from his own door. But, perhaps, it is the Pharmaceutical Society's policy just now to give the public a low opinion of their brethren, and if one part of the body *are* smugglers, it is a redeeming trait that another part (albeit the smallest), should have the boldness to call them so.

The following is worth quoting:—

Extractum Cannabis Indicæ.—(Communicated by Mr. Savory.)—Take of gunjah (bruised fine) 4lb. avoirdupois; rectified spirit (0.838) 5 gals. old, m. Macerate the gunjah in two gallons of the spirit for seven days, then strain off, and add one gallon more of the spirit; let this stand four days, and strain; mix the two tinctures and filter; then boil the hemp in the remaining two gallons of spirit for fifteen minutes, and filter *while hot.* Let all the tinctures be mixed, then distil off the spirit, and evaporate the remainder in a water-bath to the consistence of an extract. (Produce — twelve ounces).

The only other article of value, which is from the pen of Mr. Bell, on some preparations of Balsam of Copaiva, will appear condensed in our periscopic department.

POOR LAW MEDICAL RELIEF.

(To the Editor of the " Medical Times.")

Sir,—You were pleased in your journal for April the 15th, to publish a request of mine, that the gentlemen employed under the Poor Law Amendment Act, in charge of the sick poor, would be so good as to send me such information as might enable me to draw up a paper on, or digest of, the subject of the grievances they suffered, and wished to have redressed, and I have to thank a great many for the readiness with which they complied with that request. The Ninth Annual Report of the Poor Law Commissioners, laid before Parliament in May last, having stated that the duties of the Union Surgeons were much diminished in the North of England, in consequence of the various dispensaries, &c., which gave relief to the sick poor, and proper medical men being employed to take charge of poor persons engaged in collieries, factories, &c.; it became necessary to write to the surgeons of 112 Unions on these points, which delayed the printing of my report, entitled, "Facts and Observations relating to the Administration of Medical Relief in England and Wales," until the 27th of June. This Report was privately addressed to the Members of the Commons House of Parliament, and I had the honor of sending a copy to you. The additional matter for enquiry which the northern counties furnished, rendered it necessary to refer to some members of the House of Commons conversant with the affairs of collieries and factories, and Lord Ashley, who takes the deepest interest in the whole subject, finding from the state of public business that nothing could be done this session, gave notice on Wednesday the 26th, that he should move early in the next session of Parliament "for a Select Committee to enquire whether the 7th Resolution* of the Report of the Committee on the Poor Laws in August, 1838, has been carried into effect, and also into the whole mode and extent of administering medical relief to the poor." This Committee will, no doubt, be granted, and will be composed of gentlemen of the highest character and station in the House of Commons, at whose hands the sick poor and the medical profession may look for strict justice. I have promised Lord Ashley and several of the gentlemen who have consented to be placed upon it, that not more than one week of their time shall be occupied in establishing all the points at present claimed. I will take the liberty of mentioning that it will be in all probability, the last opportunity the members of the medical profession will have for a long time of maintaining their just rights, and those of the sick poor committed to their charge; and I hope they will take care there is nothing that the Committee ought to know which shall not be communicated to me by the commencement of the ensuing year. I shall be most happy to advise and confer with any individuals, societies, bodies, or associations, who will favor me with their assistance, and I beg that every one will be assured that I have no object whatever in view in laboring to effect the redress of the grievances which at present exist with respect to the sick poor, than the good which will result to them, and to the medical profession from their removal. There are neither public nor private interests to serve in which I have any personal concern, nor with which I am acquainted. I shall feel obliged by your inserting this letter in your journal, and have the honor to be, Sir,

Your most obedient Servant,
G. J. GUTHRIE.

4, Berkeley-street, Berkeley-square,
July 28, 1843.

* The 7th Resolution recommends that the remuneration to the medical men should be such as to insure proper attention and the best medicines.

MILK IN PARIS.

At the Academy of Sciences last week Dr. Donné, in reading a paper upon milk, alluded to the adulterations practised in Paris. He states that the milk which is supplied to the hospitals is deplorable in quality. He asks how it can be otherwise, when the contract price for the supply to the hospital is only nineteen centimes (a little less than four sous) per litre, whereas the speculators in milk, who buy up the produce of the farmers within a circuit of 15 leagues of Paris, pay from 25 to 30 centimes per pint of 2 litres, and sell it to the milk retailers at 40 to 50 centimes per pint, who in their turn sell it to the public at 65 to 70 centimes. M. Donné appears to us to have obtained very imperfect information of the state of the milk trade in Paris, whatever he may have discovered in the way of adulteration. The retailers of milk in Paris cannot purchase the genuine article under 50 to 60 centimes per pint of two litres, and most of them pay 60 centimes. It must be evident to all who are disposed to give themselves the trouble of calculating, that the cowkeeper near Paris could not get a profit if he sold his milk at less than 50 to 60 centimes per pint. The average quantity of milk obtained daily from their cows, in spite of all their forcing with grains, by which an increased quantity of milk of inferior quality is obtained, does not exceed per cow seven pints, or deducting the period when the cow is nearly dry, at the utmost six pints per day, which, sold at 10 sous or 50 centimes per pint, would yield 3 francs. Now the average cost of food for cows near Paris is 2 francs 50 centimes per day, independently of the rent of stabling, costs of attendance, interest of money, casualties of illness, or death of stock, &c. To put the total expense per day at nearly 3 francs, would be a fair estimate. The sale of six pints of milk, therefore, at 10 sous per pint would nearly cover the expense of keep, interest of capital, and casualties. At 60 centimes, or 12 sous, there would be a daily profit of 60 centimes on each cow, and as many of the cowkeepers have 60 to 80 cows, they would be thus enabled to reap a profit of from 30 to 40 francs per day. Those cowkeepers, therefore, near Paris, who sell milk to the retailers at a lower price than 60 centimes the pint, may be suspected of previously baptising it with water. At a distance of 14 or 15 leagues from Paris, milk may undoubtedly be purchased at a cheaper rate than of the cowkeepers near the capital, for at a distance from Paris dry

fodder is cheaper, and in the summer there is open pasture; but we doubt whether it can ever be had for less than 35 to 40 centimes per pint, and when the cost of bringing it to Paris is considered it would be impossible to sell it in a genuine state to the retailers for less than 50 to 60 centimes. M. Donne says the retailers of Paris sell their milk at 65 to 70 centimes per pint; some of them do, but we are not to suppose that these persons content themselves with one or two sous profit; and sell genuine milk. They could not sell genuine milk under 80 centimes per pint to realise the same rate of profit as they derive from adulteration. It is a notorious fact that there are milk retailers in Paris who pay 60 centimes per pint for milk, and sell it at 50 centimes, and they have the effrontery to call what they sell new and unadulterated. If they purchase this milk at less than 59 centimes, it is, without doubt, lowered with water before it comes into their hands, but the quantity of water is merely sufficient to give the cowkeeper a remunerating price for his article. If the milk is sold by the cowkeeper at 60 centimes it is reduced more than one third by the retailer who sells it at 50 centimes, and how is this reduction made? Mere water would not do, for the milk itself even in its genuine state is so thin from the food given to the cows to force quantity, that it would support little water without betraying the admixture. The milk is thickened by a horrible mixture, in which according to the recipe, the brains of the calf should enter largely; but there have been instances in which, on account of the high price of brains of this description, those of horses killed for disease have been substituted. These, we are willing to believe, are extreme cases, but the fact of the adulteration by something besides water is positive, for water alone, if increased body were not previously given to the milk by artificial means, would soon be detected. M. Donne says he has invented an instrument for testing the purity of milk, which he calls the lactoscope. If this instrument be really useful for this purpose, we hope the Government will appoint inspectors to examine all the milk that is sold in Paris, for, as we have already said, of all adulterations of food that of milk is the most criminal. In the meantime, having enlightened the public a little as to the state of the trade, we leave it to the good sense of purchasers to say whether genuine milk sold by the cowkeeper to the retailer for 30 centimes per litre, can be sold again in the genuine state for 25 centimes. It may not, perhaps, be a perfect protection against fraud to deal with retailers who charge 35 to 40 centimes per litre, for the temptation to fraud is too great to be resisted by more than 1 retailer in 50; but the fraud in this case will not be considerable, and will be without injury to the health, for, at the utmost it will be the admixture of 10 per cent. of pure water.—*French Paper.*

Stimulus to Wakefulness.—The papers mention that, to a woman who had taken opium to poison herself, the only excitation against somnolency, ordered by the surgeon after he had extracted the contents of the stomach, was the presence of the husband. Her hatred of him kept her in towering rage, which made repose out of the question.

French Insanity.—The following are the number of insane given by Government statistics for the 86 French departments, during seven years, commencing with 1835—14,486, 15,314, 15,870, 16,892, 18,113, 18,716, 19,738,—giving proportions (constantly increasing with the population) varying between 0.43 and 0.58 in the thousand of general population.

Parsley.—Dr. G. Peraire, of Bourdeaux, recommends parsley as an anti-periodic and febrifuge, and considers that it ranks equal with, but not superior to cinchona; on the contrary, there is less bitter principle in parsley than in Peruvian bark.

Arsenic in Psoriasis.—Dr. Bremard considers that arsenic will be found the most useful remedy in the treatment of psoriasis, and advises great caution in its administration. Supposing Fowler's solution to be the formula chosen, he directs the patient to begin with two drops daily, the dose being raised by two drops every second or third day, until six or eight drops be given. Some practitioners he observes are content to look upon eight drops as the largest dose to be given in one day, others administer as much as fourteen or fifteen; beyond that amount he thinks no one can venture without danger. English physicians, however, are not so easily alarmed; larger doses have been given with impunity. We observe Dr. Bremard prescribes the arsenic fasting; here we are in the habit of ordering it to be taken after a meal.

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A Journal of English and Foreign Medicine and Medical Affairs.

No. 203. Vol. VIII. LONDON, SATURDAY, AUGUST 12, 1843. PRICE FOURPENCE. STAMPED EDITION 5d.

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SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE VIII.

We are placed here below, if I may so express myself, under the exhausting glass of an air-pump on a large scale, in which a vacuum may be produced, if not universally, at least in individual cases, under the action of given circumstances. The piston which subtracts the air, is the atmosphere itself. If the superior strata of the atmosphere become rarefied by heat, that is to say, if their atoms increase the volume of the sphere of caloric which envelopes them, they compress proportionally the inferior strata; they cause a condensation of the external air which is respired by our lungs, thus increasing the activity of the respiration, and adding to the sum of life. The mercury rises in the barometer, and thus becomes an index to the increase of activity in our organs, and a sign of the return of rain or of fine weather. For, if the atmosphere is charged with moisture, this compression will condense the moisture into drops of rain; if, on the contrary, the atmosphere is dry, the compression will force towards the horizon all the moisture which might have taken its direction, towards the zenith of that region in which this compression is exercised.—But if, on the other hand, the superior strata of the air become condensed, by losing their caloric, there will be produced, in the inferior strata, an immediate vacuum, which will be proportionate, in its duration and intensity, to the action which determinates it. Now, an animal, if placed directly in the line in which this vacuum is created, may perish of asphyxia. Lightning acts in this way, where it does not destroy by combustion; so also the waterspout, the effect of which is to create a vacuum in a direct line between the earth and the clouds, and which thus produces a greater or less amount of asphyxia in the animals within its reach.

The vacuum, produced by the discharge of cannon, would asphyxiate the artillery-man, unless he took the precaution of inclining himself in the opposite direction. The wind produced by the passage of the ball is now regarded as fabulous; it is, however, very probable, that if the vacuum, produced by the rapid passage of a projectile on a level with and close to the mouth, is incapable of producing lasting asphyxia, it may, in certain cases, cause a serious disturbance in the function of respiration. Alarming instances of apoplexy have frequently been noticed to occur one after the other, during the interval of a few hours, within a somewhat limited distance. From what we have just said, we may conceive that cases of this kind are generally instances of a meteorological asphyxia. Suppose, in fact, that the summit of the column of air, in which the individual may be placed, suddenly presses with great force upon its base; the various columns in juxta-position, and which compose this principal column, will yield under the weight, by pressing away on both sides the surrounding columns of air; much in the same way as a bundle of reeds, placed perpendicularly, will give way under a pressure exerted from above downwards. The individual would then be placed in a vacuum, but in a vacuum produced with the proportional energy of a piston, which acts upon the body to be pumped at an elevation of from fifteen to twenty leagues. Remark attentively the two stages of this meteorological commotion, in relation to the effects produced by each of them. In the first stage, the incommensurable vacuum in which the individual is suddenly placed, tends to deprive the lungs of the entire volume of air which distends them; and as a consequence, and by the simple fact of this subtraction, to carry all the circulatory liquids in the direction of the zenith. In the second stage of the vibration, the atmospheric columns, becoming attracted towards each other with an energy proportionate to that by which they were separated, press the air back again into the body of the individual, throughout the whole epidermic surface; the air penetrating by the pleura will increase still more, by its external pressure, the adhesion and inactivity of the inspiratory cells, and will drive back the blood, with even greater force than that by which it had been attracted towards the vacuum, from the surface to the brain. And all this will be performed with the rapidity of lightning: the individual will be struck dead, whilst, at a few paces distant, the passer-by will have scarcely remarked the wind blowing in his face. Now, a tempestuous state of the air is not an isolated movement; a vibration is never confined to a single undulation. If by chance a second individual should traverse the vibrating column, he will be, like the first, struck with asphyxia, or rather with apoplectic symptoms of an alarming character; alarming both from the sudden cessation of respiration, and from the instantaneous ascension of the liquids towards the brain. If we admit the possibility of this meteorological condition (and who can deny it?) we are forced to acknowledge, as a necessary consequence, the possibility of the pathological hypothesis of which we have been speaking. Still we must not neglect to remark that some organizations tolerate, better than others, this kind of asphyxia; for this morbid condition, being a purely physical effect, must become modified, as a consequence of the modifications in the mechanical apparatus of respiration. We know that short and stout persons, with very short necks, are predisposed to strokes of this nature much more than individuals of an opposite organization; in the same way as there are some pneumatic machines which produce a much better vacuum than others.

This explanation will also apply to other orders of phenomena. We now know, thanks to a circumstance which a simple mechanic has pointed out for the study of the learned, that air, which is forced violently through a narrow opening, and which undergoes, in this passage, a compression upon its sides, is dilated on escaping into a cone, and consequently leaves a vacuum in the axis of its escape: thus we see that a metallic plate, when placed near the orifice, becomes attracted, instead of being repulsed by the force of the current; the vacuum of the escaping cone abandons the plate to the force of impulsion of the atmospheric column. Should the mouth of an individual be placed in the axis of a cone of this kind developed on a large scale, would he not, if this condition were lasting, become asphyxiated? or at least greatly inconvenienced, if the phenomenon were but transient? But if we withdraw the plate backwards, instead of abandoning it to its own movement, it is evident that we shall enlarge by so much the hollow of the cone. When, then, an animal retreats, it fulfils, in relation to the column of air which is in front of it, the office of this plate; it increases the vacuum in front, in a proportion equal to the rapidity of its flight. But if it should be passive in its retreat, and if, without stirring, it could be carried backwards by some means of transport, it would experience, if not a complete asphyxia (for our means of transport do not act, upon the column of air, with an energy equal to that of a meteorological commotion), at least an uneasiness arising from the displacement of the circulatory liquids and of the elements of nutrition: dyspnœa, cerebral congestion, nausea and fainting. For the vacuum will draw upwards all that is in the lower parts of the body, and force to the outside all that is internal. We have in this an explanation of the effects of the swing, of the seats in the forepart of a coach, and of that terrible sea-sickness which ceases only on reaching shore, and which produces upon voyagers such varied effects. The action of the swing is composed of two movements, which counter-balance one another in some individuals, but of which the one has much more influence than the other, on delicate persons. When the swing is pushed backwards, the mouth of the individual comes into contact with the column of air which tends towards a vacuum; when the swing advances, the air, on the contrary, is pressed back violently into the stomach and the lungs. Hence it happens that, in the movement backwards, some persons experience an inclination to vomit and a sensation of faintness; whilst, in all, the respiration seems to be suspended and to become more difficult. In travelling, if seated on the fore-part of the coach, the individual is placed in a position corresponding to this backward movement; he is constantly forced to respire in a species of vacuum; hence, those uneasy sensations which some persons experience in this position, a circumstance which leads to the seats lower down being so much preferred. Sea-sickness is owing to a similar cause. The rolling and heaving of the ship, as well as the position of the voyager, in relation to the direction of the vessel, place him almost perpetually in an atmospheric movement which tends towards a vacuum; the patient experiences a sensation as if he could vomit his intestines along with his food.

2°. *Asphyxia by subtraction of one of the elements of the respirable air.*—We are, as we have said, a vesicular and organized combination of atmospheric air, water, and of the earth upon which we live, in proportions infinitely varied, and which thus modify without limit the individual forms, which constitute the species and the varieties of the organized kingdoms. Our development being but the continuation of our birth and creation—but the progressive assimilation of the same elements of life, this great act cannot tolerate the smallest change, in the constitution of these elements, without tending, in a proportional degree, towards the cessation of the organic function. Hence, we must conclude that the nitrogen of the atmospheric air, whatever may be the essential nature of this gas, is not less indispensable, to the assimilation of respiration, than the oxygen itself; and it is high time to explode the notion that the only purpose of the nitrogen in the air is to moderate the power which the oxygen possesses of giving rise to combustion; for, if such were the case, oxygen in a state of rarefaction ought to answer the conditions of respiration; now such, we know, is contrary to experience. Asphyxia may then arise from subtraction of the nitrogen, as well as from subtraction of the oxygen of the surrounding air; but, in this case, it is not of so formidable a character as when produced by a vacuum; for the respiration may exist for some time at the expense of the quantity of respirable air which remains in the lungs, during the continuance of the alternate movements of inspiration and expiration. The

asphyxia would be alarming, were the whole quantity of enclosed air to become suddenly and exclusively replaced by an equal quantity, whether of nitrogen or of oxygen. If we attempt to respire, by way of experiment, pure nitrogen, or oxygen, or any other gas which is not in itself deleterious or disorganizing, we shall quickly experience unusual sensations—effects which are the fore-runners of asphyxia and insensibility. But the character of these sensations will vary, according to the especial state of mind or of body in which the individual shall at the moment be placed, and not in reference to the nature of the inspired gas; for every gas which is not deleterious will, under similar circumstances, produce exactly the same results. Man, when he ceases to respire, ceases to suffer. His suffering is proportionally less as he is more nearly asphyxiated; for he is so much less in relation with the exterior bodies, the incessant causes of his pains and his troubles.

We have now to consider those changes which are induced in the conditions of our respiratory function by the meteorological laws of the atmospheric constitution. According to the atomic theory, as explained in my work on *organic chemistry*, we must admit that nitric acid is probably but a combination of nitrogen and oxygen, in an inverse proportion to the composition of the air. So that, the molecule of atmospheric air being represented by a central atom of oxygen surrounded by four attendant atoms of nitrogen, the molecule of nitric acid, on the contrary, may be considered as composed of a central atom of nitrogen surrounded by four atoms of oxygen, or at least by three of oxygen, with a remaining atom of nitrogen in solution. Now, it has been demonstrated that the electric power of thunder and lightning transforms the atmospheric air into nitric acid, which is dissolved by the rain and subsequently carried off into the soil or left on the surface of our walls, and which thus necessarily sets free the carbonic acid which was in union with the earthy carbonates. But that which adds still more to this perturbation of our respiratory function, is that the nitric acid being but a transformation of the atmospheric air, in which the central atom suddenly becomes one of the satellites of the new compound, it follows that the formation of a molecule of nitric acid must set at liberty eleven atoms of nitrogen. For, to obtain as satellites three atoms of oxygen, it is necessary that the atom of nitrogen shall deprive three molecules of atmospheric air of their central atom. Such being the case, the proportions of the respirable air are altogether deranged, and the air, in this state, becomes worse than rarefied air: for, in rarefied air, we receive less than usual of that which is respirable; while in the decomposed air, on the contrary, we receive at the same time, a less proportion of respirable air, and more of that portion of air which, alone, is unable to support our respiration.

But supposing the electric spark should combine the nitrogen with the hydrogen disengaged, either from organic matters in a state of putrefaction, or from the decomposition of water, the ammonia thus engendered, by associating itself forthwith, whether with the carbonic acid, or with the various volatile acids which the nitric acid dissolved in the rain sets free from the earthy matters of the soil, this portion of ammonia, I say, will still further increase the morbiparous constitution of the atmosphere; but we shall enter more fully into this question elsewhere. We have, here, but to consider the subject of asphyxia by deprivation of one or the other of the respirable gases, and consequently by the derangement of their atmospheric proportions. We are not sufficiently acquainted with the nature of nitrogen (a gas for which we possess so few reagents), to enable us to appreciate the various circumstances which are capable of facilitating its absorption and subtraction. Our knowledge of oxygen is much more advanced in this respect. Lighted coal absorbs it, to combine it, with the carbon, into carbonic acid and oxide of carbon. The nitrogen of the air is thus set at liberty; so that at the very time when we may be guarding against the inspiration of carbonic acid gas (by surrounding ourselves with a solution of potash or of lime) and where there is no oxide of carbon disengaged, we may be equally asphyxiated, by the unusual accumulation of nitrogen, and the progressive disappearance of the oxygen. Something analogous to this takes place in the combustion of iron when carried to incandescence, as is frequently the case with those plates of a stove nearest to the fire. Iron, in a state of incandescence, absorbs the oxygen of the atmospheric air, to a greater extent than its nitrogen; it oxydises itself at the expense of our respirable air and to the detriment of our respiration, and thus, in a short time, leads to symptoms of greater or less intensity, and which seem to be the fore-runners of a painful state of asphyxia: dyspnœa, fever, weight in the head, vertigo, dizziness, &c. All these symptoms proceed from the action of incandescent iron upon the respirable air; remove the iron and you will put a stop to these disastrous effects. Add to this, that incandescent iron also decomposes the hygrometrical water of the atmosphere, and disengages its hydrogen, in consequence of its own oxidation; now, hydrogen is not a respirable gas. These effects of the combustion of metals are not so sensible, in elevated positions, as on the floor of the apartment, because the nitrogen, from its lightness, which is greater than that of the air, always tends to occupy the upper regions; hence the smiths establish their workshops in an elevated situation and where there is a free current of air; under these circumstances they feel more cheerful and better at their ease. The vicinity of substances in a state of fermentation, a process which is supported by the oxygen of the air to a greater extent than by its nitrogen, will produce a similar effect, independantly of the disengagement of hydrogen and of carbonic acid which takes place, unless the surrounding air be frequently renewed. The nocturnal respiration of plants and the pulmonary respiration of animals lead to analogous results, by expiring nitrogen and carbonic acid, in the place of the inspired atmospheric air; the same may be said of the action of fixed and volatile oils, which, when spread over large surfaces, might become at least the proximate causes of asphyxia by privation, from the power which they possess of absorbing the oxygen of the atmospheric air.

3°. *Asphyxia by addition, to the atmospheric air, of a gas incapable of contributing to the function of respiration.*—I shall refer you to the subject of intoxication, for what I have to say about the deleterious gases, or those which have the property of interfering with respiration, not by their inert nature, but by their affinity for the tissues which they disorganize, and for the organic liquids which they decompose. Any gas, whatsoever, should it even be harmless in itself, as soon as it becomes irrespirable, interferes, by its presence alone, with the mechanism of respiration, and determines an asphyxia, either complete, or progressive, sudden, or slow and chronic, if I may so express myself, according to its proportions and its permanence in the surrounding air. The symptoms which it determines in the animal economy vary by reason of these two principal circumstances, as well as from a variety of accessory circumstances inherent or foreign to the constitution of the individual. For, the presence of every non-respirable gaseous molecule expands by so much and rarefies the respirable air; whence it ensues that, in a given time, the lung does not receive the quantity of air which the special elaboration of the organ requires. At each inspiration, there is a new loss of organic products—a loss of which the consequences and results become developed in incalculable though infinitely varied proportions.

We here speak of what are termed inert gases, in the language of our schools, according to which we must have palpable results and appreciable symptoms, to enable us to judge of the activity and energy of any given substance; but, in reality, we should not attach too great an importance to this systematic distinction of gases one from another. No gas, in fact, when absorbed by our organs, can remain inert in the focus of so many elaborations; and when a disturbance is caused in the functions, it is due, more commonly than is imagined, to the direct influence of the gas, than to the mere inertia produced by its presence. Those gases seem to us inert, of which the inspiration determines no sign appreciable to our eyes. Strictly speaking, we are entitled to class, among the inert gases, and which are injurious to respiration but by the inutility of their presence, only nitrogen and hydrogen: nitrogen, which is disengaged by the respiration of flowers and of animals; hydrogen, which is one of the numerous gases set free by fermentation, or else by the combustion of iron at a white heat in the midst of an air loaded with moisture.

ON MESMERO-PHRENOLOGY AND THE FUNCTIONS OF THE CEREBELLUM.

By HENRY G. ATKINSON, Esq. F. G. S.

Being a paper read at the Second Meeting of the Phrenological Association, July the 4th, 1843.

Dr. Elliotson in the Chair.

(Continued from p. 296,)

Each portion of the nervous system has distinct properties assigned to it, the manifestation of which is the consequence of its peculiar action or irritation, and these actions or irritations are the result of stimulus applied to the part. No part of the nervous system, or of anything else whatsoever, has power to act, or not to act, of itself, any more than the billiard ball to move without the power which impels it, or to arrest itself at will. Life, motion, sensation, consciousness, will, are the result of the irritation or excitement of portions of the nervous machinery distributed throughout the body, composed of numerous parts, each part having its special property, and relation to other parts, and to the external world. The action of the entire organism we call life; the action of the several portions of the nervous system, but of the brain in particular, we term mind, just as we term that music which is any combined and harmonious movement of the separate strings of a harp, one string often acting upon another, caused by the relation of vibration. In the nervous system, this sympathetic action is greater. Any part of the cerebral mass may be excited without either consciousness or will, consciousness and will being the special functions of particular portions of the brain. It has been a great error with phrenologists to suppose, that every faculty has its consciousness, and experiences pleasure and pain, or that the will is the combined force and result of the reasoning faculties, all which shall be fully explained hereafter. I see no difference, therefore, in principle, between the irritation of plants and of the nervous masses, which we term sensation, except that the cerebral excitement is generally, but not always, accompanied by the action of consciousness, while with plants and other material masses, we believe that it is not so, and in the nervous organism there is more sympathy of parts—a more complex action. The powers which move the nervous system are either *external*, as the impressions made on the nerves which we call the senses, expanded chiefly on the surfaces of the body, communicating with, and exciting other masses, and producing sensation; or *internal*, from the stimulus or action of one portion of the organism upon the other. But in every case of excitement, it is one material mass acting upon another, and calling forth some peculiar or inherent properties. The action of the nerves move the muscles, and stimulates the fluids of the body, the reaction of which gives food and life to the nerves again, or more properly renews their material condition, and consequently their energy and healthy action, something as the flame of the lamp is fed, and revivified by its own action upon the oil, and so continues in life and motion so long as the requisite food remains in a fit condition. Unlike most other matter, the nervous system is so connected, that in its ordinary condition no part can well act alone, or without stimulating some other part with which it is connected, and to which it stands in relation; for even in dreaming, where the action of much of the organism is arrested, there is generally a combined action going on, producing the dream, or series of excitements, in combination, arising from the relation of parts, and the peculiar stimulus which

has been given. In every excitement, you mostly have lesser or secondary excitements of other parts, acting in combination, as it were, in a subservient manner.

One nervous mass influences another, by impressing it with a sympathetic or similar movement. A particular state having been once induced, the *vis inertia*, as it were, seems to be overcome with reference to that state, and it is much more readily repeated, or may fall into that same condition from excitement arising from other causes. This principle of action explains what we call habit, and memory, and is the principle on which we educate and train up man and animals: it has its evil in inducing the continuance of fits, grief, bigotry, and prejudice, while, at the same time, it gives facility of action, and makes men constant. These habits of action are, in many instances, hereditary; they also hold relation to time; they are often periodical, and follow in series. The action of the nerves is local, or more general, according to the particular excitement, its force, the peculiar relation of the part excited, and the condition of the system. When the impression upon one part is strong or continuous, it becomes relieved by exciting other parts, which is the case in Mr. Braid's system of straining a set of nerves, and so producing catalepsy through the whole system. Nature relieves herself in this way, as in tears and laughter to prevent injury. But the sympathetic action is not produced by any fluid passing away through the system, but by the action of one part forcibly impressing another, just as the action of a billiard ball is arrested or modified by its striking against the cushion, or another ball. The brain communicates with distant parts, not on the principle of the rail-road, but by telegraphic despatch. I believe, there is not any such thing as a vital fluid. Light and sound are produced by a material action upon a material medium; electricity, mind, and motion are the same; certain arrangements of *matter* in motion, causing all the phenomena which we recognise. Power, therefore, is not matter, but the effect or property of matter.

I have stated, that each portion of the nervous system has its special properties, and that these properties are the consequence of a peculiar arrangement of matter, and are called into life or existence by motion, or rather they *are* motion, caused by touch or pressure applied to the part, arising either in the action of one internal mass upon another, or from the influence of some external matter. This position I desire strongly to impress upon the consideration of the meeting, because I conceive it to be the great principle of action throughout nature—a law of action to which there is no exception. Mind is composed of a number of nervous forces, which are the properties of separate masses of brain. Each mass, under particular excitement, influences other portions of the system; and so the different powers are excited and controlled, as the case may be. The nerves have only power to maintain a certain amount of action at one time, and it is probable that two impressions cannot co-exist with consciousness, but follow in a succession so rapid, that they appear continuous. No mass is free to act, or not to act, nor to use any other mass as an instrument, or as a slave. Every portion of mind is equally dependent, and without power of self-control, any more than the water which falls over the precipice into the lake below. By the different actions of the brain, mind is excited—it is regulated and restrained by the several relations, and the balance of power which nature has established in the constitution of the brain.

To say that I can regulate my mind, therefore, is nonsense, because I and my mind are one and the same thing; mind—the brain—regulates itself, and thus my friend Mr. Basil Montagu is quite right in saying, that the celebrated lines of the poet—

> And binding nature fast in fate
> Left free the human will—

is unintelligible jargon, and it is just as false as it is absurd. The idea of anything existing without a cause, or power without a fixed principle of action, is to advocate the doctrine of chance, of powers on which there could be no dependence: there never was, or is, or ever can be, anything whatsoever which is not impelled to be—exactly what it is, and when this is clearly understood, an immense amount of evil and ill-feeling will be at once removed from the world, and the reign of charity will commence, brightened by intelligence and hope, softened and elevated by a purer faith in all the ends of providence. Now, the same law, or principle of excitement, regulates the action of the nerves distributed through the body. Each of these has its special function, to be moved in a particular way. There are nerves of sensation, and nerves of motion: bundles of chords having their origin in the brain, pass to the face, and down the spine in double columns, the nerves of motion being in front, and those of sensation at the back. There are also nerves connected with the various internal functions and secretions. From the spine there are branches going off to the limbs and different parts of the body. The nerves of sensation give information to the brain; the brain wills to perceive these impressions more or less distinctly, and induces different movements through the nerves of motion, according as it is itself moved, actions of which we are not always conscious, and which are excited by the brain without always being willed. Through the habit of action in the system, certain actions are induced, and kept up, with very little excitement, so that we may walk and think at the same time. The brain does not give to the nerves their properties, but only excites those which they have. Many of these may be excited directly upon themselves by irritation, and other means, particularly during sleep, somnambulism, and the mesmeric trance. We may also irritate a nerve after the brain has been removed, and cause certain properties to be displayed as of motion; but such movements will not be felt or regulated by will, because it is the brain which feels and wills. By irritating the spinal cord after the brain is removed, and in some cases, during life, you will cause starts and contractions throughout the system; or you may irritate only one part—a leg, an arm, a finger, and there will be no action in any other part. You may excite the nerves going from the spinal chord to particular parts or functions, and those parts or functions will be influenced and no others. The irregular action of these functions will cause pain in the back in those nerves, which pain may be removed, and the function itself restored to healthy action, by local application of mesmeric power; or you may influence particular functions by exciting that portion of brain having relation to such functions. There is no reflection in all this from the spinal chord, nor from the brain,—*no reflex motion*, (an idea which Marshall Hall has taken up from others, and insisted upon); it is the simple irritation of particular nerves causing certain properties of those nerves to act, but without will, or consciousness, or guidance, just as we irritate the leaf of the sensitive plant, and the leaf closes without any reflex action. If you press upon the toe of a decapitated frog, the limb will contract, very much in the same manner,—all which may be proved in an endless variety of ways. The brain, then, does not control the action of the rest of the body, or the rest of the body the brain, but all act in harmony, each impressing each, every part having its peculiar property. We may, therefore, irritate an organ in the brain, and bring into action its particular function, or we may irritate the end of a finger, and cause it to contract and move without any influence being conveyed or received from any other portion of the system, and thus arrive at the primitive or special functions of each part, or when acting in any combination, or influenced by any other part.

But I have said enough, I trust, on these important points to impress the idea which I wish to convey, that every portion of matter has its peculiar property and relation to other matter; that its properties are inherent; it does not receive them from another, as a vessel becomes filled with water from a spring; but I am not bringing forward these opinions for the sake of supporting materialism and necessity, but because I believe them to explain a general principle of action throughout nature, the clear understanding of which is most essential to enable us, in our further investigations, to unravel all the mysteries of nervous action, and to gain a more intimate knowledge of all the phenomena of life. Let us first establish the fact, and the general law, and whatever is the consequence of such must be right, and he is, indeed, a poor cripple in morals and in intellect who could shrink from the fullest enquiry and from open and honest discussion of every subject. The world has yet to learn to think: we invent occupation for the fingers, and leave our brains, and all their wondrous faculties, to famish—to be starved outright, and to become the victim of any folly that may chance to fill the atmosphere we breathe,—anything being appealed before common sense and the reasoning faculties, which were, nevertheless, given to us expressly that we might be guided safely through all the rocks and shoals of an unenlightened world. But to proceed.

It is the province, then, of the phrenologist, and of the physiologist, to ascertain, as far as possible, the precise function, in health and in disease, of each portion of the organism, the relation and connection of the several parts, their modes of action, and the different causes of excitement; in fact, the whole conditions under which every phenomenon in the system is made manifest.

Now by mesmerism, we are enabled to produce peculiar states of the nervous system, similar to those which occasionally occur, arising from disease, or other disturbing causes, and by this means more readily excite the simple action of any particular part, or of any particular combination, arrest this, and excite that, induce this or that condition, and relieve the patient at will, without any fear of injury, but during the process of the cure of disease, and thus are enabled to study all the phenomena of life, and to gain an insight into the nature of nervous action, and into the special function of each part, under every circumstance, and hence may arrive at the causes of disturbed action, and at the remedy of evil, which, as we advance in knowledge, is always found to be of the simplest nature. Ignorance is always forced and brutal—intelligence ever gentle and kind.

But I must not dwell longer on this, but come to the matter upon which I wish more particularly to arrest your attention—the functions of the cerebellum.

In my paper last year, I announced the discovery of a number of new organs, and, among others, organs of the muscular powers in the cerebellum. I described a beautiful case of inward consciousness, if I may so express it, the manner in which I obtained certain important information, and the reasons I had to have confidence in what was revealed to me from time to time. The whole matter was then so novel, that I abstained from going into any detail, and only alluded to the existence of certain powers, to assist others in their experiments. Since then, I have devoted much time to the enquiry, and have been able to confirm what I then advanced. There are four great primitive powers in the cerebellum, besides amativeness. That portion nearest the ear, being the desire of muscular action, and this seems to be divided again; a small part, quite beneath the ear, possibly having relation to the action of physical destruction, and the rest to that of physical contention, opposing in action, tugging, fighting, contending. The primitive powers probably being the simple desire of action, and again to contend or overcome, we obtain the single action of these, or indeed any other organ, best in those who are not very excitable, whose combinations are not so rapidly induced as in some. In fact, these would be to the more physical powers, so to speak, what destructiveness and combativeness are to the mental; they are quite distinct. At the top of the cerebellum, half way between the ear and the occiput, is the organ of muscular sense, a power chiefly giving a knowledge or feeling of the state of the muscles, and of their power to act. Beneath this is muscular power, giving strength and force, inducing a desire to exert it, in working, walking, lifting, &c., according as it may be directed by other powers. And in the centre we have amativeness, and a physical sense, a sense of the functional condition—the feeling of heat and cold and pain, of health and disease, or of the general internal and physical condition of the

body, without reference to the muscles. Here we seem to have completed, in a most beautiful and satisfactory manner, what was deficient, and what has been the cause of so much controversy—a knowledge, the importance of which, to our health and happiness, we can scarcely too highly appreciate. But I may be asked if these new organs are likely to exist? since I declared some of them at least a year ago, and no one has verified their existence. Are we to give up our long cherished notions, that the whole cerebellum is the organ of amativeness? I answer "yes, indeed, for it is true, and nothing so easily proved;" and the sooner we get rid of the gross error under which we have laboured so long, the better. The only wonder is that this was never discovered before, that we should have been so long blind to a fact, which when known and reflected upon, appears so self-evident. But go to nature, and you will not be disappointed. These organs are generally more easily excited than any others, and often where no other parts can be impressed at all; and within the last fortnight many of my friends have been induced to test them, and are quite satisfied of their reality. Probably the fear of exciting what was supposed to be the sole function of the cerebellum, has caused many to abstain from the enquiry, and I might never, perhaps, have discovered them, but for the beautiful case of internal vision which I have referred to, and which I described last year, in a lady of the purest feelings, and of unimpeachable character, the mother of a large family; and, in truth, during the state of mesmeric somnambulism, the mind is often so pure, so simple, so unsuspecting, that they are truth and simplicity itself; there is no artifice or evil in their thoughts. They are then what people should be, and what education and training may one day make them. When I enquired about the muscular powers, this lady at once pointed to parts of the cerebellum, and described the peculiar functions in the same impressive manner, and with the same readiness as on all other occasions: it was all the same to her, a known power or a new one, were spoken of with precisely the same ease and care, for she spoke only from what she felt, and of what she was ignorant of, quite in her ordinary condition, and of that of which I had not the least conception. I was much perplexed with her descriptions at first, it seemed so to war against our previous ideas; but I persevered, and enquired again and again, in every possible way, every word being taken down at the time. I could detect no error; her explanations were so clear, so logical, and so beautifully expressed, that I could not hesitate to receive what was told me as a most important revelation. But I determined to test each point in every possible way, and to exert myself to find other similar cases. And I have not laboured without success. The whole has been confirmed, and nothing can be more satisfactory. I have proved the existence of these organs, and any one else may do the same. The following are the means I have used, the confirmation of similar cases of inward consciousness having no mental or physical sympathy whatever with myself.

By exciting those parts in other mesmerised persons, and observing the effect. Again, by asking the patient, in not very perfect cases, of what they had been dreaming when I had excited muscular action. For instance, they will say, "I wanted to break something, or knock some one down, only I was afraid of injuring them." This is clearly distinct from destructiveness. In these cases I could not excite destructiveness or combativeness. I have always found the dream correspond with what I have excited. I have excited these powers in children in their ordinary sleep, and caused them to rise and perform certain movements, and then to lie down again, without waking. I can produce catalepsy by exciting one power, and remove it by touching another.

In many cases you may produce deeper sleep by exciting muscular sense, and soothe muscular irritation by holding the hand over these organs.

Fatigue will cause pain in the muscular powers of the cerebellum; in fits pain is often experienced, in these parts of the head.

The action of laughing causes pain in the cerebellum.

A girl, who had her arm taken off at the elbow, and the stump moving violently up and down for 18 months, had an intense pain in these muscular organs. When I stopped her arm by mesmerism, the pain ceased, but returned in different points, corresponding with the particular power under excitement. When any of her functions are disordered, the effect of an issue, the disease in the joints, or in the bone of the stump, &c., she always has experienced an intense pain in the centre of the cerebellum, which seems to go out under firmness, (the organ of consciousness) and behind the eyes, but when she has pain in the head from over-exertion, or the stump moves, or from the action of the nerves at the end of the stump, feelings as though the fingers of the hand which had been removed, were contracted, then the pain is in the side of the cerebellum, and seems to affect a part beneath and between veneration and benevolence. And it is curious that these points, where these pains are felt, are the most sensitive parts to mesmeric action; the top of the eyes, between benevolence and veneration—at firmness rather in front, and in the cerebellum, a fact which is very curious and important, and which I do not think has been observed before.

From the situation of the cerebellum in the head, with reference to the muscular powers, and its connection by nerves with the other powers and with the spinal cord.

From the action of the hand, the natural language of the muscular powers. I have seen persons pulling with one hand, and holding the back of the neck with the other.

By causing certain strained actions in the limbs, and by exciting the spinal marrow, asking where it is felt in the head.

By exciting these powers in the brain, and asking where and in what sensation is felt, and how this alters the condition of the body, and which portion of the spinal cord is affected. And again, whilst exciting an organ by one metal, another metal would destroy the effect, whereas no will of mine, with the same metal, would do anything but increase the effect. Touching muscular action produces catalepsy, a drop of water or breathing on the organ reduces it instantly, producing catalepsy, giving a sensation or pain in the organ. When the patient cannot feel you touch them, or press on any part of the head, and they are quite insensible, touch muscular sense, and if susceptible, they feel the pressure on this or any other part instantly. Touch the central organ and they feel pain; remove the finger and they are again insensible; heat and cold are felt in this part. A lady who when mesmerised becomes cataleptic, and rigid, but curiously retaining entire consciousness, and whom it was always most difficult to relax again—on breathing behind the ear she was relaxed instantly. A boy who had one eye-lid closed so that he could not open it for some days, being in a partial mesmeric state, had a pain in muscular sense. Another lad, who had been deaf and dumb for some months after a fit, with great pain in the cerebellum, and when mesmerised, greatly excited to hit his head against the floor, and twist about continually. I put my hand over the cerebellum, and he became quiet, whilst touching any other part excited him. In ten minutes afterwards he was made to hear and speak as well as ever he could in his life, and said that he remembered feeling relieved on a hand being placed on the back of his head, to which his quick recovery may at least be partly attributed.

Lastly. I have observed a multitude of cases of extraordinary muscular and functional power in children and in grown up persons, and have found in every instance, these organs corresponding in development with the powers of the individual. And so on I could multiply the proofs of the reality of what I have advanced, and relate cases and facts, until the evidence swelled into a volume, and proof became overwhelming. It appears to me that there is nothing more clear, or that you may confirm so certainly as this, in the whole range of science; and here I shall leave the matter. For the present, I shall abstain from the philosophy of the question, until the simple facts become fully established, when I shall have something more to advance upon the subject, which I trust will be considered at least as important as that which I have communicated in this paper. These discoveries have beautifully confirmed those of Sir Charles Bell. Here are organs for motion, and others for feeling. If I excite those for motion or for feeling, and ask which part of the spinal cord is affected, in the one case, it is described as a quantity of long nerves in double column, united together in front, and in the other as those in the back, corresponding with what is known to be the fact, but of which these somnambulists were quite ignorant. In conclusion, I may add, that from the first I was impressed with the importance of this enquiry as far exceeding every other. What I have done in this matter has been with the sacrifice of much time. I have laboured diligently and carefully in the cause of truth, and I trust not altogether without success, and if I can only in the end reflect, that I have been able, in some measure, to arrest the cant and the prejudice of ignorance, and to advance the knowledge of man, it will ensure me an enduring gratification which no worldly reward or position could have afforded. But there is neither merit nor demerit in what we do: we are each but working as our faculties impel us: we deserve neither reward nor punishment: nature does everything. We are part of nature, but instruments in the hands of providence, working out the great ends of creation. But to learn wisdom, and to do good, is the highest of all delight, and to this end should every human being aspire. There is power enough, even in but one new truth to work out the mightiest revolutions over the world, and against which armies and senates, and priestly authority, can avail nothing. Truth is ever glorious and eternal. It is in vain we strive against it. Phrenology is true; mesmerism is true; mesmero-phrenology is true; and what I have now advanced is true; but I proclaim it not with the pride of discovery, but with the sense of its truth and worth, and with the confidence of knowledge; for truly, now may the mesmerist and phrenologist exclaim with Lord Bacon,—"We have held up a light in the obscurity of philosophy, which will be seen centuries after we are dead."

After Mr. Atkinson had read his paper, Dr. Elliotson rose and said, that he had never excited the cerebellum in any of his patients, for he had been anxious to abstain from any course which might at all be considered incorrect in reference to his mesmeric patients, but that Mr. Atkinson was quite right in having done so, having first received an intimation of the situation of these powers from the revelations of an extraordinary somnambulist having the curious power of internal vision and consciousness, and a lady of undoubted character, and that it was but just to Mr. Atkinson to state, that about ten days ago, when he had several patients sleeping, Mr. Atkinson came in, and without previous intimation or speaking, touched some part of the cerebellum of one of the patients, and the arm immediately rose, became rigid, and the fingers closed, and that by simply breathing on the spot which he had touched, the arms were instantly relaxed. There could be no suggestion or sympathy in this, for the patient had never manifested any phenomena whatever, but simple mesmeric sleep, and was quite unimpressible in every other respect. Mr. Atkinson then tried another patient, and a similar result ensued, only that the arm rose, and became cataleptic, without rigidity, and since which these patients have remained cataleptic. Mr. A. tried a third patient, a somnambulist, and who also exhibited some points in mesmero-phrenology, and obtained a similar result on the muscular power; but in this case, there being a total insensibility to pressure or touch, whether the pressure were on the head or the hand; but on pressing on another part of the cerebellum, (muscular sense,) she felt the pressure of touch, on that or any other part, instantly; he removed his finger from the organ, and she was again insensible. Dr. Elliotson thought it right to state thus much in justice to Mr. Atkinson, and in confirmation of his views.

Dr. Engledue related a case which seemed to confirm, in some measure, the organ which Mr. Atkinson called muscular force.

Some objections having been raised by other members, and answered, Mr. Atkinson said, he hoped that no expressions in his paper had conveyed the idea, that he wished to press these facts and opinions on the meeting. He merely had brought to the meeting the result of his labors. He had explained the different means which he had used, and the great number of ways in which he had tested each point which he had advanced. Let others go to nature, and enquire for themselves if he be right or not. Nature is the source of all truth, and let us enquire here first, that our opinions or objections may have weight, and be saved from the guilt of indolent error, from injustice, and those worst of sins—the sin of presumption and the dogmatism of ignorance.

SIR BENJAMIN BRODIE.

The medal subscribed to this surgeon at St. George's, was presented to the worthy baronet, on Thursday, Aug. 3, at Willis's Rooms. Several physicians and surgeons, of all degrees of eminence, were present. Sir Charles Clarke was the medium of presentation. He explained the origin, and accounted for the delay, of the ceremony; and, after adverting in strong terms to the necessity of medical reform, delivered a glowing eulogium, which was as warmly responded to by its object, Sir B. Brodie. The medal was struck by Mr. Wyon, of the Royal Mint. On the obverse is a bust of the baronet; on the reverse, medicine is typified as a female figure kneeling to trim the Hygeian lamp. Over the design is the following motto from Lucretius:—

E Tenebris tantis, tam clarum extollere lumen qui potuisti!

On the other side we have, "Consocii et discipuli gratulantes," which gives us a nominative case on both sides, an example rarely offered, we believe, by Latin inscriptionists, who know the utility of the ablative. The medal is the largest ever struck, being three inches in diameter. Its value is fifty guineas.

The following are the speeches given *verbatim* as delivered, beginning with Sir Charles Clarke, who, rising and turning to Sir Benjamin Brodie, thus addressed him:—

Sir Benjamin Brodie,—You are aware, Sir, I dare say, that between two and three years ago, it entered into the minds of your friends and your pupils to present you with a memorial of your services and your exalted talents. Shortly after—within a few days of this entering into the minds of your friends, though but a very few days from that time—a large meeting was held in the board-room of St. George's Hospital, and there was an unanimous expression of the same feelings towards you, an unanimous disposition to carry the intention of your friends into full effect. Sir, a committee was formed for the purpose of arranging the matter, and I dare say, Sir, it may appear to yourself, and to others, that a considerable length of interval has elapsed between this proposal and the execution of our designs. But, Sir, it is to be taken into account that communications were to take place between this city and distant countries,—that letters did not pass on the wings of the wind,—that letters, though conveyed by steam, did not reach their destination with the velocity of electricity Sir, the design of such a medal as I shall shortly have an opportunity of transferring from this meeting to your hands,—the design of this medal, by so celebrated an artist, was not the work of a day. (Cheers.) Sir, the formation of the die was a matter of considerable length of time. In the formation of a die, if I am rightly informed, accidents frequently take place, and on the present occasion I am led to believe that two of the dies were broken in the attempt. (Hear.) Sir, I mention this matter in order to allow for the delay which has taken place between the origin of the suggestion, and the completion of the work. (Hear, hear.) Sir, the medical profession is, perhaps, less regarded by the public, its professors are less noticed and regarded by the public, than the professors of any art or science. I might say that the Government of this country have neglected to signalize merit in our profession, but they have not been backward in signalizing merit with honours in the navy, in the army, in the church, and in the law. (Cheers.) Sir, there appears to have been, on the part of the public, a disposition to laugh at and to beat down the members of this profession, and the science which it upholds. In consequence of the obligation of some of the laws of this country, the treatment of the complaints of the needy is—not forgotten—but the cure of the needy is given to the lowest bidders amongst the professional men of this country. (Cheers.) Sir, the poor—the wretched and numberless poor are made to traverse the chamber of sickness into the atmosphere of health, in the same way as a number of sheep are driven through a turnpike-gate, their passage being paid for by the score. Sir, this is true, but it is discreditable to the lawgivers, and disgraceful to the feelings of the profession. Sir, I think it right to advert to these circumstances, though at first it may appear to you to have no natural connexion with the occasion upon which we have met. I have thought it right to advert to these circumstances, in order to show that among us, as professional men, we derive a pleasure in commemorating the services of the different members of our profession, and taking care that their names shall live when their bodies shall be wrapped in the tomb. (Cheers.) Sir, had it not been for the generosity, the good feeling, the liberality, and the kindness of the profession, your relation and friend, Sir, the illustrious Baley, might have had, it is true, a stone at the foot of his grave, his name might have been mentioned on that stone, but his eminence might have been forgotten, and at last there might have been no trace of his family. Aye, more; that benevolent, liberal, kind-hearted, and scientific man might have been carried to his grave unknown. But, Sir, the leading arm has been called forth by us, in order to perpetuate the memory of those men, and this imperishable medal has been employed on the present occasion to mark such merit, and to reward such services. (Loud cheers.) Gentlemen, there was a time, some thousand years ago, when such things were not: there was a time in which the great poet, Homer, wrote, who did not think it beneath him to make use of this expression:—

"A wise physician skilled our wounds to heal,
Is more than armies to the public weal."

Sir, I have taken the liberty of giving to this meeting the reasons why medical men have thought it imperative on themselves to perform those offices which I am about to perform to yourself. But, Sir, we remember that you have been the servant of a public hospital for a great number of years; you have been a teacher of the art of surgery for two-thirds of your life, or half of your life; you have devoted your spare hours—I should like to know where the spare hours are to be found in the time of a man generally employed in the profession.—You have stolen, Sir,—you have stolen those hours from your rest: you have stolen those hours from your family; you have stolen those hours from your relaxation; you have stolen those hours from your amusement—and you see the result. Well, Sir, but there are other physicians and surgeons of the London hospitals; there are other teachers of anatomy and surgery; there are other writers upon subjects connected with our profession. How is all this? Sir, you have united these three into one,—you have amalgamated the whole without destroying the film, the texture, or the substance of any one of them. Do not suppose I am here using the language of flattery; no such thing. I should be ashamed to stoop to the meanness of flattering a friend and a fellow-student. I am stating to you that which is the fact; and that which may appear to be the language of flattery, is in reality the voice of truth. Well, Sir, what have you done for the profession at large? Are you deserving of this? or is it a freak of fancy of your friends and pupils? Is it an endeavour to give something you do not merit, and which we cannot justly give? It is, Sir, no such thing. You have been a teacher of anatomy, Sir, in the schools, and you have been lecturer on surgery for something like thirty years; you have been assistant-surgeon of St. George's Hospital for a period of between twenty and thirty years. Sir, when the emoluments—if they could be called emoluments—when the paltry receipts connected with your situation at St. George's Hospital have been laid aside, you, Sir, you were found giving clinical lectures gratuitously to the pupils of that hospital, (cheers) and I consider a clinical lecture very much resembles a work on geology, accompanied by plates. (Laughter.) Well, Sir, have you done nothing else? Is there nothing to be found in the transactions of the Royal Society? Have you written no papers on poisons? Have you made no observations on animal heat? You know well you have, and we know it too, and the Royal Society know it too. (Cheers.) Well, Sir, but that is not all. You have written a work on diseases of the joints. Now, we all know well enough how, formerly, diseases of the joints used to be lumped. A man had a hip disease to treat: very well—in hip disease, what does he do? Why, he gives the modes of treatment laid down, some local, some general; the general modes of treatment going to this—to injure the constitution of the patient, and lay the foundation of disease. (Cheers.) Well, you, Sir, I say, you, in the treatment of diseases of the joints, you have discriminated between the different diseases, and you have put the matter into such language that "he who runs can read." Sir, you have written on the diseases of the urinary organs, and few people have had more opportunities of acquiring information upon those diseases than you have had. But, Sir, you have written another book, and small as it is in size, it is one of great value: I mean that work in which you lead the practitioners to discriminate between certain diseases requiring one mode of treatment, and certain resemblances of those diseases, requiring some other mode of treatment: which require—not confinement, not exposure to the air, which require not starvation—but good living and TIME. How do you stand with your own body? I do not mean with your body corporate—I am sure that on this occasion you stand well with that (a laugh); but how do you stand with that body which is called the Royal College of Surgeons? Sir, you have been president of that body, and licentiate of that body, and vice-president of that body. You have been professor of anatomy and surgery to that body, a member of the council of that body, and one of the examiners of that body. Well then, Sir, I say, by the public your merit has been estimated—by the profession your services have been estimated, to my knowledge, throughout the counties of England. Well, Sir, you have merited from five bodies of surgeons, by the situations you have held, and you have merited from the profession, the medal which I am about to transfer to you this day by the request of this assembly. (Cheers.) Sir, it was matter of question, first, in what form this testimonial should be; whether in the shape of a piece of plate for your table, in the shape of an ornamental dish for your sideboard, or whether it should be in the shape of the medal I have here in my hand. Sir, I was persuaded, with the committee, that this would be most agreeable to your feelings, and certainly it has proved to be the most congenial with our own. (Cheers.) Sir, if I am rightly informed, a copy of all the medals which have been struck in honor of individuals, is transmitted to every society, and every collection of medals; so, Sir, your resemblance will be copied, will be before the eyes of all who read the intentions of the subscribers—and the reverse will shew, not only what you have merited, but that we were sensible of it. It makes us a party to the whole, and we, as well as yourself, shall find our way into the cabinets of the different medal-collectors; and, Sir, all I have to say is this, in conclusion, that I hope you will accept that which you have so well deserved, which, we trust, you will leave as an heirloom to your son, as a proof of the celebrity you have acquired in your profession, and of the regard which has been felt towards you by us. (Loud cheers.) Gentlemen, I purposely waited till this feeling of

applause should have been ended, and then I meant to propose to you that which will call forth another peal. I mean to propose to you the second toast — "The health of Sir Benjamin Brodie."

The toast was drunk amid loud cheers; and

Sir Benjamin Brodie then rose to return thanks, and was loudly applauded. He said:— Mr. President,—It is, Sir, no affectation in me to say I really want words to express what I mean on this occasion; for whilst, Sir, on the one hand, I am sensible of the honour you have conferred upon me, considering it as the proudest distinction of my life—while I am gratified to see so many of my old friends, so many of my pupils, so many individuals distinguished in the world, not disdaining to be here this evening,—while I am gratified, also, by the favourable sentiment so cordially expressed by yourself, and which others have not less cordially responded to; Sir, I cannot but feel that all this is more than really belongs to me,—that I am indebted to the kindness and partiality of my friends rather than to my own merits, (cheers, and cries of "No, no") and that there are other individuals, who have laboured in the same vineyard, as worthy as myself, and to whom the profession owe obligations greater than they owe to me. The consequence of this is, that at this moment a feeling of humility is invested in my mind with that of gratified ambition. But out of this, Sir, arises another feeling, in which there is no complication, which, pure and unalloyed, will descend with me to the grave; that is,—gratitude to you, Sir, and my other friends, for your generosity and kindness. (Cheers.) Sir, when I first entered on the profession to which I belong, that profession became to me my world, in which I lived, moved, and had my being. (Cheers.) I thought of no distinction that was unconnected with it. I had no hope, I desired no further reputation, and there was no object nearer to my heart, than that of having the good opinion of those with whom I was associated. Sir, a long lapse of years, and a more extended intercourse with the world, and a more varied acquaintance with men and manners, have made no alteration in these my sentiments. (Cheers.) I have never wished that I could retrace my steps, and begin my career in another sphere of life. I know no profession which, after all, is preferable to ours: I know of no profession which possesses so honourable an independence. Sir, I know of none. I know of no order of men who are more disinterested, or who are more ready to perform gratuitous acts of kindness than the members of the medical profession; and who, in addition to these moral qualifications, are more distinguished for their good sense, freedom from prejudice, and general knowledge and attainments. And, Sir, having mixed a good deal with other portions of society, I am only too happy to fall back upon my own profession as affording me the best examples of moral character, the most prudent counsellors, and the kindest friends. Sir, you have been pleased to revert to my publications connected with physiology and surgery: with respect to the former, I consider the chief merit they have is, that they may lead others to work in the same field; and with respect to the latter, I am happy to have your favourable opinion, and my ambition respecting them will be fully satisfied if they have been found of any use in getting my professional brethren through the difficult labyrinth of surgical practice. (Cheers.) But, Sir, you have been also pleased to speak of me in connection with the St. George's Hospital, and of my services there, and you have alluded to a meeting at the hospital for the foundation of this medal, on the occasion of my resigning my office; and thinking it my duty to speak, on this occasion, of St. George's Hospital, I beg to say that to St. George's Hospital, to the medical school attached to it, to my colleagues and pupils there, I am mainly indebted for the advantages I have possessed in my profession. (Cheers.) The name of St George's Hospital is associated with my most interesting recollections; with hopes, and fears, and joys, and sorrows, that have long since passed away with my young ambition, the anxieties and aspirations of my early life. (Cheers.) Sir, it has been my good fortune to be elected to the office of assistant-surgeon of St. George's Hospital at a most unusually early period, and to have held it for a considerable time. I entered my name on its door as a candidate for practice. It was in St. George's Hospital I was enabled to lay the foundation of what little knowledge of pathology and surgery I may now possess, and there the happiest hours of my life have been passed. (Cheers,) Everything there, Sir, tended to my improvement. The study of the patients' cases, the observations I had to make in the wards, the discourses and conversation I had with others, and last, Sir, but not least, my friendly intercourse with the pupils, among whom, I am happy to say, I have preserved a large proportion of my friends, I hope for life. (Cheers.) Then, Sir, in common with others, I had this advantage, that St. George's Hospital always presented to my mind the names of some of the brightest examples of professional skill in former times—the name of Cheselden among the proudest. It was there, Sir, Cæsar Hawkins rose; and there, Sir, John Hunter pursued those eminent researches in physiology that were destined to alter the condition of the human race. There, Sir, I find the names of both the Heberdens, father and son, distinguished alike as practical physicians, accomplished scholars, and gentlemen. There, Sir, I found the names of many physicians among whom many now present can bear testimony to their simplicity of mind, their private worth, integrity, and virtues. But, Sir, it would be ungracious in me, on such an occasion as this, if I did not also recur to the name of another individual, to whom, as a living example at the time I was student, and afterwards as assistant-surgeon at St. George's Hospital, I am still more indebted—I mean, Sir Everard Home, who at that time devoted his whole energy, not only every hour in the day, but every portion of the hour, to some useful undertaking in the performance of the duties of a surgeon. And, Sir, he had this great quality—which it would be well, not only for the members of his own profession, but persons in all situations, to imitate—that when a difficulty occurred to him, instead of shrinking from it, it seemed to be the object of his mind to meet and to surmount it. (Cheers.) But, Sir, his name has long since been added to the list of those who belong to the times that are past; and, Sir, when that circumstance accidentally comes to my mind, it recals the scenes of my early life, and I am sometimes startled when I recollect all at once that I am so far advanced as I am in my worldly course. This, Sir, is no vain sentiment; and among the numerous debts of gratitude I owe to him, I know of none greater than this, that the friends and associates of my early life are my friends and associates still, (cheers,) and many of them have done me the honour of being present on this occasion. To that list of friends, I have been enabled to add another and greater pleasure—that some are taken from the list of those who were my pupils. Sir, much as I am indebted to those who have done me this great honour, I am still further indebted to them for having allowed me to receive this from your hands. To you I am bound by a long and uninterrupted friendship, and your conduct, both professionally and publicly, has gained the respect of the members of the profession. (Cheers.) Gentlemen, I have the possession of the chair, and I beg leave, without asking his permission, to propose "The health of Sir Charles Clarke."

The toast was drunk with three cheers, and

Sir Charles Clarke returned thanks.

Dr. Francis Hawkins responded to, "The health of the physicians and surgeons of the metropolitan hospitals and the provincial hospitals of the United Kingdom."

Mr. Bransby Cooper proposed the health of Dr. Chambers; and Dr. Chambers returned thanks, and proposed "The health of Mr. Travers, as one of the most distinguished ornaments of the profession," who responded to the toast.

The health of the committee and the chairman, Mr. Fuller, was then drunk, and acknowledged by that gentleman; and

The chairman then proposed, "The health of Mr. Charles Hawkins, the honorary secretary to the committee."

Mr. Charles Hawkins, in returning thanks, said that he felt most deeply the honour conferred upon him by the company, in drinking his health; and that when he remembered the occasion which had called them together, that honour was as unexpected as he was sure, unmerited. What little exertion he had made use of in the transactions which had ended in their meeting there that day, had little merit but in reference to the source it was given to, but he could not but feel the greatest pleasure and pride in having been allowed to take part in proceedings which had terminated in such a manner. He was unworthy of the honour done to him in drinking his health together with the health of such distinguished members of the profession as were then present. It would, indeed, ill become him to make any observations on the occasion which had called them together, and if he attempted to utter an expression of his feelings with regard to their distinguished guest, he felt certain that his tongue would do very great injustice to his heart. (Cheers.) He was certain that every pupil educated at the hospital with which Sir Benjamin Brodie had been so long connected, would be proud of being associated with him; and the feeling which, he was sure, all that distinguished surgeon's pupils,—all those who had had the advantage of his guidance, and his instruction, and his example—entertained towards him, could not be better expressed than in the words of the poet:—

> "Tu pater, et rerum inventor, tu patria nobis,
> Præcepta suppeditas tuisque ex inclytis chartis
> Floriferis ut apes in saltibus omnia limant,
> Omnia nos itidem, depascimur aurea dicta,
> Aurea, perpetua, semper dignissima vita."

"The healths of the other surgeons with Sir Benjamin Brodie, and the present surgeons of St. George's Hospital," was then drunk, and acknowledged by Mr. Cæsar Hawkins; and "The health of Lady Brodie," and "The better health of Mr. Wyon," having been drunk, the company separated at a late hour.

PENCILLINGS OF EMINENT MEDICAL MEN.

VELPEAU.

The name of Velpeau stands at the head of French surgeons; he is a fair reflexion of what French surgeons are socially, and offers us the type of a class infinitely larger in France than in England, a medical man reaching the first rank both in society and in his own profession from one of the lowest callings. In watching his course we are compelled admiringly to ask how can science fail of zealous and consummately able cultivators, when she looks for recruits through so wide a range, and takes such trouble to secure and encourage them! There is here a lesson of wisdom shadowed out to us by France, which England would do well to profit by. If wealth and large resources are a country's strength, and these depend, as they do, on the mind's powers—shall a nation do wisely and let any faculty of a good intellect slumber? We think not, and so France acts, or we should not be tracing to-day the rude outline of a great man, which we now present to our readers.

Alfred Arnaud Louis Marie Velpeau, was born on the 18th May, 1795, in the Commune of Brêches, near Château-la-Vallière, in the arrondissement of Tours in the Department of Indre-et-Loire. His father was a blacksmith, and a poor one, and *therefore* the bright mind of the future surgeon seemed doomed to want education. No letters were necessary for what seemed marked as his future calling, and he would have been left without any if a thoughtful mind and happy disposition of character had not very early impelled him to voluntary efforts at self-education. At an early age thought, spelling, reading, and writing, followed each other; and luckily his father's library, the only one in the village, contained three books, and of these, two, as luckily, were medical. One was the "Traite d'Hippiatrique," the other, "La Medicine du Pauvre." Before his tenth year the child was master of both; and on a neighbouring surgeon failing to get rid of an ulcer young Alfred suffered from, the patient so well applied his books' lessons as to essay, and succeed, in curing himself. The cure was marvellous, and the villagers who

heard it felt no inclination to deny him his deserts, and with them young Velpeau was already a surgeon.

The books being learned by heart, he made another step in knowledge, by the arrival in the parish of the old vicar, who returned from the expatriation caused by the French Revolution. This good priest, who made himself the gratuitous schoolmaster of his parish, only survived his return four months, and from that time to 1811, Velpeau spent his time in the labour of the forge, and occasional quackery in the service of neighbours. In one of these latter experiments he was not over successful. Acting, as was his system, on the instructions of his veterinary "Manuel," and but rudely apportioning his doses to the difference of tolerating power, between man and horse, he had given a girl a rather large dose of black hellebore. The effects appeared dangerous, and a "*real*" doctor living at a distance, was sent for. After remedying the mischief, the worthy physician sought acquaintance with the young empirical blacksmith, and was so charmed with his youth, and promise of ability, as to interest himself for him with a wealthy gentleman in the neighbourhood, who allowed the boy to share the education given to his own children.

As he advanced in studies, the future offered proportionately rich and glowing prospects to his rising ambition. His mind was above his place in society, and the sense of justice, which is one of the great boons of nature to us, made him pant to make things more harmonize. His parents shared the generous enthusiasm. In their humility of ambition they felt that their son might be one day *even* an Officier de Santé!*—one (to them) of the rank of gentlemen—if an humble one. They nobly underwent the heroic sacrifice necessary for such a promotion. The boy was sent to Tours with thirty-seven and a half franks in his pocket to pay for the sessions' studies, and provided while there by his industrious mother with weekly supplies from home, of what then formed his daily food, winter and summer, *bread and cheese.* His studies were intense and constant, the day being given to his profession, his evenings to the *schclastic* studies, which his early education made but too necessary. His application won the notice of Bretonneau: favour proportionate to his merits flowed in upon him; and during the invasion of the allies his abilities and usefulness were proved so conspicuously in attendance on the wounded, that he at once found himself in the possession of a sum of money voted to him as a *bonus*, and of the honour of being both "Interne et Officier de Santé."

Much was gained; the past shewed a great ascent made most prosperously in a short time; but this but stimulated to further progress. Tours, therefore, grew too small for him. In the receipt of ten pounds a year from the hospital, and enjoying a tolerable practice, his failure in a courtship suit was made an occasion for trying his fortunes in Paris. There he arrived in 1820, in his twenty-fifth year..

Now was a new period of privation, anxiety, and severe battling, again voluntarily entered upon. With four hundred francs in his possession, he set himself down to his Parisian campaign, and on the strength of that, and some further aid, which his old professor and friend lavished on him, soon found himself inscribed a doctor, and further honoured as prize man in anatomy and physiology at a *concours* of the Ecole Pratique. For the three years after his arrival he attended the Hospital Saint Louis, and during a portion of the time gave a course of Anatomy and Surgery, acted as first assistant of Bougon, surgeon to the Duke de Berri, won the Assistantship to Anatomy at a *concours*, gave a course on Operative and Obstetrical Medicine, which was remarkably well attended, and at the end, in 1823, won his doctorship by a *thesis* of generally acknowledged power and brilliancy on "intermittent fevers, &c." The attainment of the last rank was immediately followed by his nomination as "chef de Clinique Chirurgicale" of the Hospital de l'Ecole. His uprise now was rapid. He was chosen "agrégé à l'école de medicine," was with Blandin and Bouvier of the three who drew lots for the high honour of the "prosectorship," became, in 1828, by unanimous choice, surgeon of the central bureau of hospitals, acted as principal surgeon to the Hospital St. Antoine, followed in the same capacity to La Pitie, and thence to La Charité.

* An humble class of country general practitioners.

The professorship, the highest honour within the reach of a French medical man, was only attained in 1830. It was then after having successively *concoured* in vain for the chairs of pathology, physiology, and midwifery, that he was honourably installed in the high place of Professor of Clinical Surgery to the Parisian Faculty of Medicine. He is also a Chevalier of the Legion of Honour, Member of the Academy of Medicine, and of most of the learned societies of distinction in Europe.

As a surgeon, Velpeau stands if not in the first rank of surgeons who *have* graced France, certainly in the first rank of those she now possesses. He is one of those high characters with regard to whom we hesitate to attribute genius, yet give credit for an amount of ability that very closely resembles it. It is not perhaps that their natural talents are inferior to those of the others' whom we clothe with the higher attribute, but that their modesty or industry being greater, they appear less as of themselves than of their instructors, acting less from the original impulses of their own minds, than from the suggestions of those predecessors whom they have cultivated so assiduously, and the fruits of whose acquaintance they are so pleased prominently to exhibit. Our notions of the genius of Shakspeare and Scott, depend perhaps as much, as on any real excellence, on the fact that the very nature of their writings compelled their thoughts to *appear*, if not to be, the pure creations of the poet's brain, to come from within *sans* aid from without, and thus not only implying for them more originality than any other kind of writing, but getting that credit for more of it than they really possess. Misled by a partial experience and very erroneous deduction, we regard labour as incompatible with genius; and thus in surgery we are sometimes inclined to look upon a Lisfranc or a Liston, who know nothing, or boast to know nothing of others' labours, as possessed of greater *natural* talents than a Velpeau, who adds to his own lights those of his equals' varied experience. Velpeau's knowledge of disease through books, as through personal observation, is enormons. A complete master of the medical literature of his own country, he is as well acquainted with that of Germany and of England. No theory of disease, however little received, is unknown to him—no plan of treatment prescribed by a good authority, however little followed, has he not heard of. The *whole domain* of medicine he has daringly appropriated, and there is scarcely a department of it in which even the cultivator of a specialty surpasses him. He is in truth what he has been well called, a living medical encyclopedia.

A less mind or a more indolent character would be weighed down into a mere historiographer of disease, under such a marvellous load of erudition. With Velpeau, however, it is only an illustration of his own experience—an indication to future practice. The great power of Velpeau is analysis. Disease presents itself to him instinctively in its divisions. He will, in an instant, enunciate the varieties in a given malady, and descend to the minutest details as to the elements influencing the particular morbid action. This individualising tendency of his mind is favorable to good diagnosis, and successful, though perhaps not striking or brilliant practice. The men who run into large generalisations, and are ever seeking to reconcile every given appearance with some two or three grand theories, are likely to be much at fault, and much in doubt, in practice. Velpeau observes with care, the malady, and troubling himself only with the immediate causes, and probable tendencies, has a more practical and safer judgment. He feels that he has a wider range of work, and seeks, therefore, a wider range of means, and it is in their nicer adaptation that he reasonably founds his hopes of success. Both for diagnosis, therefore, and treatment he may be classed in the first rank of surgeons. In operations, though fond of them to excess,* he occupies a very high, it may be, but yet an humble place. He is careful and ever dexterous; but his rapidity and delicacy of finish is interfered with by the atrophy of the index finger of the right hand, caused, it is said, by some dissecting wound. His experience, however, in operations must have been immense, and he always appears *totus in illis.* Apart from *concours*, they have been almost the sole excitement of his life, and while engaged in them he shews the zest with which they are appreciated by a brightened eye, lightened and cheerful carriage, and his ever and anon addressing his ensanguined hands to his mop-like hair for a towel! It is, however, affirmed of him, and the statement, in speaking of a French surgeon ought not to be overlooked, that before undertaking any serious operation, no man can be more conscientiously careful in ascertaining its imperative necessity.

As a lecturer, Velpeau is eloquent, though wordy. His subject is overwhelmed with matter: the *read* and the *observed*, on the smallest point he touches, is so enormous, that he is like a man who can hardly force his way through them. A profusion of ideas seem to be every moment jostling for prior enunciation; and in his perplexity what to do with them all, he sometimes scarcely does justice to any. This is a drawback, however, not seen in his writings. There we have all that the most vigorous and best-informed intellect can give, or the most refined taste look after. In his attendance, Velpeau is punctiliously accurate. He pays both students and patients the respect of never failing in his engagement to them. At 7 in the morning, or earlier, he is at the hospital, and while he is there he *works:* the performance of the duties he so rigidly asks from his pupils, he shews first in himself. His morning observations to the students commence at 9, when he proves to them with what advantage to a pupil a genuine surgeon *can* traverse the wards of a hospital. He is the lion of surgery to all our countrymen who pursue the study at Paris.

In person, Velpeau is, in France, of the middle height—in England, he would be below it. Though under fifty, he looks above it. Reflection and over-work has done the work of years both in frame and face. His figure is spare, rather bent, and bears an expression of suffering. His brow is the noble and redeeming feature; without it he would, with his sharp sunken eyes, turn-up nose, high cheek-bones, and swelling upper lip, have looked unmitigated vulgarity. The region over the eyes, the perceptive, is well developed; but still more so is that above it, where the the reflective faculties are supposed to have their abiding place. As he passes you in his well-shorn face, irreproachably white cravat (within which his chin wearily reposes), his well-worn, grey greatcoat, his head bent forwards, his two elbows resting in his crossed hands, he suggests to you the aspect of a man who has given many a weary vigil to science, to whom the greatest habitude of life has been that which wears it out perhaps the quickest—reflection and study. One of his peculiarities, almost indicated by the careful smoothness of his own face, is a profound horror and very determined hatred of that part of *La Jeune France* which is exhibited in ferocious moustaches and long beards. Velpeau knows nothing of *capillary* attraction. Sir Peter Laurie, in his hottest crusade against long hair, is but an humble imitator of the French surgeon, who never omits an opportunity of turning these manly out-shoots of the skin into ridicule or contempt. Indeed his antipathy, it is said, pursues him into the examining chamber. The long-bearded and well whiskered candidate finds himself there an exceptional case. The professional drawback from the formidable appendage must be made up with an

* On one occasion, an American physician tells us, he was operating upon an old man for fistula, and while amusing himself in trimming the cut edges of the wound, his eye was suddenly caught by a large mole on the man's back. In a minute the excrescence was off, much to the merriment of the class.

extra stock of professional knowledge: so prominent a brother should, for the profession's character, have the head's interior well stocked: and Velpeau will not understand why men who will cultivate more hairs than other people, should not know also a little more anatomy and pathology. Our English friends in Paris, who seek a speedy return with a diploma, will take the hint, and either keep or make themselves shorn.

In a memoir short as this must be, it would be impossible to enumerate Velpeau's publications. They range through the whole field of medicine, and are numerous enough to make in themselves a bookseller's catalogue. A portion of one of his works will be found in our fifth and sixth volumes, consisting of admirable lectures on the Surgical Diseases of Women.

We cannot conclude without noticing, in Velpeau's career, the strong argument furnished for an improved state of things in this country. Had Velpeau been born an Englishman, he most probably, even with the same tendencies and family aids, would never have become a surgeon. Great natural abilities—that high gift of Nature to the service of the human race—has much more to fight against in its uprise here than in France, where the reproach still justly applies, that—

Slow rises worth by poverty depressed.

But had he become even a surgeon, how certainly would he have passed his life in obscurity,—his great power of industry unedueed, or unstimulated —his abilities without a field—his boundless utilities wasted in the desert air! Had he even aimed at hospital employment—the only road to surgical fame—to what low arts, to what sycophancy of manner, abjectness of spirit, and underhand and empirical procedures, must one with his want of birth, connections, and wealth, have been compelled to resort—a dirty and foul course of action, which genius may commence but cannot go through. If it could, it would cease to be genius. With Velpeau, it was all otherwise: the battle was to the strong—the race to the quick. He had only to shew himself, in a fair trial, open to all, the more deserving man, and the place he merited was his. Velpeau's life, indeed, is but one course of *concours*, as his great uprise and useful labours is but one homage to their wisdom. Almost every year saw him engaged in a *concours*. The pupil of Lisfranc, he was this year pitted against a host—and nobly justified his preceptor's confident wager, that "his little man would beat the field." Another year, he was pitted against Lisfranc himself, and beat the master! Lisfranc may in rage undying yet call "his little man" a blacksmith, and a parroquet, but the world will not the less believe, that the system which placed the two in competition was a noble one, and the practice of it, which placed the pupil first, most judicious. Would that we had some such system here. Soon would be born stubborn and indomitable industry; dormant genius would wake; Englishman's mental supremacy would shew itself in medicine, as elsewhere: there would be "great men" springing into fame and usefulness, and how would the bounds of science be enlarged, and some of the worst woes of humanity softened, lightened, or utterly removed!

Tests for Arsenic.—In distinguishing the antimonial from the arsenical deposit, Dr. Nicolai observes, that when the crust is thin, the stain of arsenic is brown, that of antimony, of a dull grey or smoky black color. There is, however, a new character which, he says, was first pointed out by Bischoff, namely, that the arsenical stains are all soluble in a solution of chloride of soda, (Labarraque's bleaching liquid,) the thin stain immediately, the black deposit more slowly. In decomposing this solution by hydrochloric acid, and gently warming it to expel the chlorine, we obtain a liquid from which sesqui-sulphuret of arsenic is easily thrown down, on passing into it a stream of sulphuretted hydrogen gas The stains produced by antimony from Marsh's apparatus are wholly unaffected by a solution of chloride of soda.

TO CORRESPONDENTS.

Several subscribers have this week placed themselves on the right side of our ledger. With regard to others, our notice of last week still remains in full force. Is this an oversight of theirs?

Other pressing claims have denied us space for the conclusion of our notice of Sir C. Scudamore, and other reviews.

A Correspondent sends us a few "literary announcements." Wishing them of a more favourable character, we publish them with some doubts of their genuineness.

Dr. Marshall Hall *has several works in hand, consisting of exclusively original investigations. which only await his next book parcels from Italy and Germany to receive a finishing hand.*

" Dr. Elliotson *is to favour the public with a work on the greater susceptibility of the beautiful and innocent to the influence of mesmerism, being a satisfactory explanation of Messrs. Wakley and Liston's non reception of its inestimable verities.*"

" Dr. MacLeod "*on articular rheumatics*," *with illustrations, derived from* articles *in the Medical Gaz.*

Mr. Eagle *will shortly publish* " *on the advantage of excising spleen before engaging in scientific controversy, to which is added a modest request to Mr. Jackson to submit to the operation.*"

Dr. Willshire *will give the public a new work on the failure of Dieffenback's operation for squinting.*

Dr. Grant *will shortly publish the review of a rival's book, on zoology, &c., reprinted from a comparatively private journal, to secure perusal.*

Dr. Todd *is about to issue a new work, of great originality,* " *on the exhalations of well-stocked graveyards as a great curative agent for hospital inmates.*"

Dr. Golding Bird *a work on chemistry, in all its branches, urinary maladies, anatomy, physiology, botany, medical jurisprudence, and all the various branches of surgery and medicine. The omnivorous habits of Dr. Golding Bird are a great guarantee for his excellence in each of these different departments.*

Mr. Renshaw *has been proposed for a share in a future publication of the Gazette. It is understood that Dr. Frederick Bird will lend his assistance. The number, notwithstanding Mr. R.'s care, is to come out in an otherwise decent form.*

Mr. Wakley *is about to offer a small prize (the profits of the last six months sale of his trustees' journal) for* " *the best essay on the art of restoring the lost qualities of worn out* lancets. *No surgeon or physician connected with any of the Insurance Companies can be admitted as competitor, and the successful candidate must enter into engagements to keep the amount of the prize a secret to advertisers.*"

Our Correspondent adds that the announcements were thought too mild and too little pungent for " *Punch.*" *We wish all our readers will have the good nature to think so too. But though laughs are pleasant, who loves to pay their expense?*

A Querist.—*The question* " *what is acting as an apothecary, a surgeon, or a druggist,*" *is a very difficult one, and as it is always left to juries, will be answered differently in different places, especially as the evidence of medical men—on which the juries will judge—will differ so essentially as to the different duties. The* " *true and legal definition of an apothecary,*" *asked by our correspondent, might be given by us, but would guide nobody. All, however, agree that he who, in a purely medical case, is consulted, and prescribes medicines for which he charges, acts as an apothecary.*

Our attention has been called to an advertisement of Mr. Edenborough, in the " *Times*" *of August* 4, *announcing his retirement from the Assistant-Surgeonship to the Eye Infirmary of Guy's Hospital, and pointing out where he may be consulted daily. With our correspondent, we are compelled to look upon this procedure as extra-professional.*

Mr. H. G. *before sending us the case, should have examined the state of the pericardium. It was the main point for* post mortem *examination.*

M. S. *will find the fact he enquires after in any public library. If he try, and fail, we shall* then *be glad to take some trouble to assist him.*

T. C. D.—*We have received Dr. Connor's very interesting and benevolent pamphlet, entitled* " *Aolec, or Human Sacrifices in Ireland.*" *It points attention to the really awful loss of life attendant on lime-kilns in Ireland, and gives useful suggestions towards a remedy. We take shame for not noticing a work written with so benevolent a view before, and cordially give Dr. Connor our best thanks for it.*

Medicus.—*What would be the use of such a war of personalities? We at least will not enter into it. The letters lie in the office.*

Verus.—*We doubt the wisdom of inserting the letter. We have no room for what would be a lengthy and might be an unprofitable controversy. We think the homœopathic principle* old; *it is the* nil prodest nisi læditur idem *of the Latins. But we do not expect a convert in our correspondent.*

Mr. Atkinson's *note next week.*

Several communications have been received, which are under consideration.

THE MEDICAL TIMES.

Saturday, August 12, 1843.

Tu nisi ventis
Debes ludibrium, cave.
Nuper sollicitum quæ mihi tædium
Nunc desiderum, curaque non levis,
Interfusa nitentes
Vites æquora *Graham*-as. Horace.

This is truly a moment of deep and vital importance to the medical community—an importance it is not in the power of words to exaggerate. What we fear rather is, that the indifference, which, through one unfortunate cause or another, has weighed on us so long, will not allow us to appreciate the crisis in its full force, and that our emotions and activity will be far, very far below the emergency. In very truth we are amazed and bitterly grieved at the wonderful tranquillity of the profession. While in its aggregate phase it offers a surface smooth and glossy as a summer lake, does it, or can it, know that Sir James Graham is taking steps to grant the Council of the College of Surgeons a new and prolonged lease of power, and to give Medical Reform the go-by for another half-century? At this moment the renewed charter of that misgoverned body is in active preparation, and, perhaps, before another address from us to our readers, the royal assent will have anticipated and frustrated all opposition. It is a vain thing the attempt to under-rate the importance of the matter. The whole organization of the College will be remodelled *after the wishes of the present rulers.* The worst portions of its self-elective government will be perpetuated, and all its members, with the exception of two hundred, sink into a subordinate class in an institution in which now at least all *rank* as equal. We may justly declaim against this as anticipating Parliamentary legislation—as stealing a march on us—as the perpetration of a mean trick—as a cart-before-horse lawgivership; but the more shabby and ridiculous the procedure, the more does it demand our resistance, for it adds to the feeling of injury the stinging sense of insult and outrage. Yet what *are* we doing? Our associations—and we have, we are told, a few—seem fit for anything but the purpose for which they were founded. Political inertia is their sole policy. The protection of our *public* interests seems the last and slightest of their cares. They can squabble about allocation of advertisements, distribution of funds, number and extent of eating and drinking

"demonstrations" for officials, empirical self-adulation and self-publication at the expense of the members—but any active exertion for the great objects of their union seems an idea too large to enter the managing directors' self-sufficient brains. Their whole duty to the profession, they think, if we may judge from their acts, is to turn their associations into joint-stock trading communities, which, while leaving their sick to perish of inanition, swindle booksellers into publishing speculations which threaten them with a name in the *Gazette*, and a body in Queen's Bench. To unite medical men in the bonds of a generous and philanthropic amity, to concentrate their energies and give them a public direction—to stimulate, to guide us into a noble enthusiasm for professional amelioration, an indomitable resistance to aggression, or continued mis-govevernment,—these are duties the very conception of which would be an insult and a reproach to them. They are far out of the scope of their appointed action. From that *corporation sole*, the "British Association," it would of course be preposterous to expect anything. It commenced with the most wretched example of folly and incapacity. It tied its fate, not to justice, not to professional welfare, but to the *Lancet*, and, of course, sunk with it. Its mean and miserable recent attempts to get aid from other journals when reduced to its last gasp—all its functions of vitality being exercised through the weakest of remaining threads, Dr. Webster, of Dulwich—only proved the fatal desperation of its circumstances, and the power of adversity in teaching proud minds humility. Without members, paying or non-paying—a skeleton regiment, with but one wretched but enthusiastic veteran left to perform its nominal duties—it can do nothing, and of course nothing can be expected. But the Provincial Association, which *has* members and *some* management, surely can do, and *could have* done, something. That it has not, and will not, is matter for deep, very deep regret, and calls from its members for a searching scrutiny into both its organization and administration.

Councils, however, may intrigue, Ministers conspire, Associations betray—but if we are true to ourselves, we are sufficiently powerful both for defence and vindication. Let, then, man have council with man: we are *here* on common ground, and are all the dearest of friends in the tie of the dearest of interests: let proposals for a public meeting rapidly run the round of the profession: let a committee of watchfulness and direction be immediately formed: and let the great room at the Crown and Anchor, the Freemason's Tavern, or even of Exeter Hall, be filled with our brethren, its walls reechoing their energetic protest against the most insulting outrage ever offered them—LEGISLATION FOR THEM BY A MINISTER IN THE DARK. It is thus, and thus only, the profession will prove itself worthy of honourable treatment or good government: it is thus, and thus only, it will ward off the most singular aggression on a class's rights ever ventured on during the present century.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 3d Aug., 1843.

At a late sitting of the Academy of Sciences, M. Peligot read a memoir on tea, and concluded, that its infusion ought to be considered not only as an excitant, but also as an aliment, analysis having demonstrated that if broth contained more azote, it contained more solid substances.

Notwithstanding the numerous advantages which medicine has derived from the discoveries of several eminent chemists of the present day, it is impossible to admit, without comment, the conclusions of the learned author of the above memoir. In the first place, to decide if a given substance does or does not contain alimentary principles, it ought to be analysed alone, and uncombined. M. Peligot made use of an infusion, in which a considerable proportion of sugar had been dissolved. Secondly, it is necessary that clinical observation should support the opinion, as by it alone can the action on the human frame be decided. Now, with respect to the infusion of tea, what does it teach us? Taken in small doses, it is a gentle stimulant, acting only locally; in stronger doses, it extends its influence to the whole system, and gives rise to symptoms of general excitation. Again, when taken on an empty stomach, it does not produce that sensation of satisfaction which we experience when we take any nutritive substance.

The polemical war, which commenced between Messrs. Jules Guerin, and Maisonabe still continues. The *Gazette des Hopitaux* having published an article criticising the statistical table, and pointing out the errors which it contained, Messrs. Brochin, Dechambre, and Kuhn, wrote to the editor, maintaining the correctness of their report, as it was deduced from documents drawn up by themselves; that out of 25 deaths, 15 were caused by scarlatina, angina gangrenosa, variola, typhus, and other intercurrent diseases, and 10 from tubercular affections, or lumbar abscesses, with which the patients were affected before coming to the hospital; that if Professor Orfila mentioned 3 years, he did not suppose there could be any doubt as to his opinion on the subject, for he said in his letter, that the table was similar to that sent to him; that as they are not rivals, but merely historians, they have no reason to doubt of the success obtained by M. Guerin in the treatment of deviations of the spine; finally, that a patient may certainly be said to have experienced *amelioration*, if by the sub-cutaneous method, a lumbar abscess is reduced to 1-4th or 1-5th of its original size, or converted into an *inoffensive fistula*. In reply, the editor says, that the letter is far from satisfactory,—1st, because no answer is given to his question, "whether the 25 deaths took place in or out of the hospital?" 2nd, That if M. Orfila mentioned three years, it was, of necessity, the period not having extended later. 3rd, That the only answer to the doubts expressed as to the extraordinary cures announced, is as follows:—"the author of the article has perhaps some personal reasons to disbelieve the possibility of the result obtained." 4th, That the word *amelioration* is explained by a term not less extraordinary viz. *inoffensive fistula*; and he concludes by advising the authors of the letter to make that letter agree with their table, as in the former, they say 10 deaths were caused by tubercular diseases, or lumbar abscesses, and in the latter only seven.

Another periodical accuses M. Guerin of quackery, in permitting the establishment under his direction to be praised in the public papers, and quotes an article published the 26th June in the *Memorial of Bordeaux*. This may be right, but the editor seems to forget the precept:—*qui sine peccato est vestrum, primus in illam lapidem mittat*, for a few lines further on is inserted a pompous recommendation in favour of an establishment for sick or convalescent persons.

The following prizes will be given in 1844:—1st, the Medical Society of Paris, one of £20 for the best memoir "on the administration of iodide of potassium in syphilitic disorders." The memoirs must be forwarded, post-paid, to Dr. Prus, secretary of the Society, *Rue de l'Abbaye St. Germain* 12, on or before the 1st January, 1844. 2nd, The Veterinary Society of Calvados and La Manche, a silver medal for the best memoir on this question—"what means ought to be employed to prevent or cure, without having recourse to cauteries, synovitis hydrarthrosis or soft swellings of the joints, or sheaths of the different tendons, in the horse, and more especially in the colt?" Memoirs to be sent, post-paid, on or before 1st Aug., 1844, to M. Cailleux, secretary to the Society, Caen. The prize will be given on the 2d Nov., 1844.

M. Pelletan, professor of physic at the School of Medicine, has, on his own demand, been allowed to retire on a pension of £120 per annum. Several persons are already entering the lists for the vacant chair, the nomination to which will take place next November.

Professor Forget, of Strasburgh, having administered several substances in rheumatismus, published the result in the *Bulletin General de Therapeutique Medicale et Chirurgicale*. The conclusions are, 1st, that the *oil of the liver of codfish* is useless; 2nd, that *iodide of potassium* is rarely efficacious; 3rd, that *nitras potassæ*, in large doses, is really useful in some cases of rheumatismus, viz. in the commencement of the disorder, or when it is not very intense, or attacks a weak, lymphatic, or nervous subject. This substance rarely succeeds in muscular rheumatismus, or arthrodynia, when very acute or chronic. The dose is from ʒij to ℥iss per diem. It seldom gives rise to accidents; in general, does not act on the urinary organs—frequently causes perspiration—sometimes acts on the kidneys and skin at the same time—produces an evident diminution of the pain and fever without influencing apparently one organ more than another, and fully justifies the appellation given it as temperant, though its mode of action escapes analysis. As to the sulphas. quininæ, he did not try its efficacy, being fearful of accidents.

Two cases of variola, complicated with meningo-encephalitis, furnished Professor Rostan the opportunity of pointing out the danger and the necessity of blood-letting. Bleeding, says this eminent practitioner, ought not to be employed in ordinary cases of variola, and with greater circumspection as the disorder advances towards its termination. In general, meningo-encephalitis does not take place until the suppurative period, (in the two cases under consideration, it appeared at the same time as the variola,) and though several authors have pointed out the danger that may be caused by purulent reabsorption, still as he considers the complication far more serious, he does not hesitate opening the vein.

M. Rivail read a memoir to the Phrenological Society, in which he concludes, that phrenology ought to be divided into three branches,—1st, *organologia cerebralis*—a branch which treats of the different parts of the brain affected to each faculty; 2nd, *facultologia*, which treats of the different faculties, and their union with each other; 3rd, *cranioscopia*, which treats of the influence the brain exercises on the form of the skull, and of the external signs by which the development of these organs may be appreciated.

Professor Forget communicated to the Medical Society of Emulation, a case of imperforated anus An attempt was made to reach the end of the intestines by plunging first a trocar, and then a narrow bistoury, upwards, in the direction the rectum offers in its natural state, but without success. An artificial anus was proposed, but the parents would not permit its being established, and the child died eight days after, without any extraordinary symptom. *Post mortem examination.*—Abdominal viscera in their natural position; meconium accumulated in the end of the colon, which was distended by gas, and slightly inflamed: from this point to the anus the rectum was replaced by a fibrous cord, which was separated from th sacrum by cellular tissue, infiltrated with blood; the peritoneum, after descending on this last for a quarter of an inch, was reflected on the uterus. The bistoury had followed the direction of the fibrous cord, going upwards in its interior. In

conclusion, M. Forget states, that the knife must be pushed upwards, in a direction almost vertical, as the os sacrum, at that age, does not offer the slope it has in after life.

A similar case occurred lately at the *Hospital des Cliniques*, in Professor Dubois' ward; the child when brought did not appear to suffer much, but on a sudden it began to scream, and on examination, offered all the symptoms of peritonitis. A narrow bistoury was then plunged in the direction of the rectum, but produced no good effect, for the child died shortly after. On opening the body, the peritonitis was discovered to have been raised by the passage of meconium into the cavity of the peritoneum through a perforation of the cœcum.

Without wishing to be thought a partisan of clairvoyance, it is but just to state *authentic* facts, when they come to our knowledge. The following is one which was related to me by a colleague, now practising in Paris, and of whose veracity there can be no doubt. I employ his own words,—"When a youth, I went to spend my holidays with my family; the housekeeper, an elderly woman, requested me to magnetise her, saying, that she would then answer any questions I might put to her, and shewed me the necessary *passes.* The magnetic sleep soon came on, and I asked her, '*what is the servant about?*' Her answer was, 'instead of doing her work, she is seated near the fire in the kitchen, fast asleep, her needle-work on the ground, at her feet.' I immediately went into the kitchen, separated from the room in which we were by the ante and dining-rooms, and found the servant actually in the position described. On my return, I enquired, 'where is my father?' 'At his club.' 'What doing?' 'Playing at piquet.' 'Is he winning or losing?' 'Losing.' 'How much?' 'Oh, not much, only 4s. or 5s.' On my father's coming home, his answers confirmed, in every respect, the above statement, for he had been playing, and had lost the sum mentioned."

The Royal Invalid Hospital contains, at the present moment, the following old soldiers:—blind, 152; both legs amputated, 11; one leg amputated, 309; both arms, 8; one arm, 224; paralysed, or impotent, 235; epileptic, 12; insane, 29; with a silver nose or chin, 8; lame, or incapable of walking, 131; with feet frozen in Russia, 23; crippled in the hands, 130; wounds of various descriptions, 1,020; serving men, 175; upwards of seventy years old, 511; upwards of eighty years old, 33; total, 3,012. The entries are about 200 per annum, from 1815, i. e. in 28 years, upwards of 6000 veterans have been admitted. The deaths are, on an average, from 110 to 150 per annum on the 3000 pensioners.

Academy of Sciences.—Sitting of the 31st July.—Messrs. Roguetta and Mojon addressed a note, "On the action of Nitras. Potassæ on Rabbits." Their experiments tend to solve the following questions:—1. Is it true that nitras. potassæ is absorbed by the skin, as Professor Orfila, and other toxicologists, have advanced? No: but ʒiij. dissolved in ℥iij. of water, and injected into the sub-cutaneous cellular tissue, killed the animals after eight hours.—2. What is the smallest dose that may be given without causing death? XLV. grs. dissolved in ℥iij. of water, killed in four or five hours; ʒss. in the same quantity of water, in thirty or forty hours; in smaller doses, death did not follow. The intestinal tube, examined in these, offered no signs of inflammation or erosion.—3. What are the antidotes to nitras. potassæ? ʒss. dissolved in wine, produced no effect on the animals: from this fact the authors are led to conclude, without, however, asserting it, that the stimulating properties of alcohol, neutralize the ffect of nitras. potassæ.

M. Jourdant having presented a memoir on a method for curing psellismus, M. Colombat read a paper in which he says that this method is but a modification of part of the treatment employed by him for the last 15 years; and that the only difference is in the position of the tongue after inspiration, that organ being, by his method, forced backwards and upwards as far as possible, in order to incline the larynx downwards, to open the glottis, and to diminish the contraction of the chordæ vocales.

Academy of Medicine.—Sitting of the 1st August.—Professor Velpeau read two reports: - 1. On a case of *gastrotomia* and *cystotomia* (high operation). Female, ætat. 33, having constantly enjoyed good health, was seized, without any known cause, with heat, pain, and swelling in the left groin; the two first symptoms yielded, and the woman went as before to her work; the swelling increased gradually in size. Some months after, renewal of the inflammation, which necessitated an application of leeches, and was followed by a discharge of thick and greasy urine, containing some hair. A second amelioration took place, which, however, did not last long; for soon after, for the third time, the inflammatory symptoms came on, the tumor burst above the pubis, some sanious pus exuded, and a fistula was formed. M. H. Larrey, at the earnest request of the patient, operated. First, he enlarged the opening formed by the fistula, and found in the interior of the tumor a detritus of conception; after removing it, he carefully examined the interior of the cavity, and perceived that it communicated with the vesica urinaria: this last containing a calculus, which was removed by the wound of the abdominal parietes. The patient recovered. Professor Velpeau thus concluded:—In this extraordinary and interesting case, the tumor was produced by the presence of the impregnated ovum in the peritoneum, which, as soon as it had attained a certain size, gave rise to the first series of symptoms: the second were caused by the formation of the communication with the bladder; and the third by the establishment of the external fistula. As to the calculus, it had formed round some hairs, which were the nucleus.—2. On a letter addressed by M. Debrou, claiming, in favour of his father-in-law, M. Vallet, Chief Surgeon of the Orleans' Hospital, the priority for the operation of Hare-Lip, he having performed it twice before Professor Blandin. (Vide MEDICAL TIMES, Vol. VIII., p. 250.) Since then, added M. Velpeau, I have myself performed it successfully twice, which makes a total of five cases: two of M. Vallet, (one death); one of M. Blandin, and two by me,—and concluded by proposing a slight modification, which consisted simply in dividing the *septum narium*, and then pushing back the inter-maxillary bone. M. Blandin, in reply, said that he considered he had an undoubted right to the invention of the operation, as he had described it in his lectures, and performed it long ago on the dead body, and that if he had not practised it before on the living subject, it was only because he had not had a suitable opportunity. As to the modification proposed by M. Velpeau, he did not approve of it, as it may cause fractures more or less dangerous. M. Velpeau said that he did not consider the fractures so dangerous as M. Blandin supposed, and that they did not always ensue, as the anterior portion of the septum narium may pass on one side of the posterior portion, without fracturing it. M. Blandin answered that he did not think such an event possible; but were it so, still he thought the inter-maxillary bone would be pushed forward with sufficient force to destroy the cicatrix as it began to be formed.

GARLAND DE BEAUMONT, D.M.P., B.L. & S.

Honorary Physician to the Spanish Embassy.

HYDRO-FERRO-CYANATE OF QUININE.—Dr. Reiersen, of New York, mentions that this salt has been administered successfully in those cases of ague, where the remedy was required to be not only a febrifuge, but an anti-phlogistic,—that is, where the fever was connected with an inflammation in some organ or other. Dr. Cerioli has used it in twenty-four cases, in which the sulphate of quinine had been previously given without benefit; he ordered it in the dose of from two to eight grains in the course of the day, made into pills, and found it in each case effected a cure, nor did he ever observe any of those exacerbations which generally occur after the use of the sulphate of quinine.

REVIEWS.

The Chemist, for August.

THE present month is an average one. It is is made up principally of translations from the French journals. The following are two of the most interesting:—

On the Salts contained in the Milk of the Cow, and on the Analysis of Milk.

BY JULIUS HAIDLEN.

THE salts of the milk in which the suckling for a long time finds the inorganic materials necessary for the formation of the bones, of the blood, &c., merit our attention as well as its organic principles. However, the analyses of the chemists who have been occupied with the study of them, (Pfaff and Schwartz, and Meggenhofen for the salts of the milk of women, and Berzelius for those of the cow's milk,) are far from agreeing with one another, and this want of agreement has led Professor Liebig to direct Dr. Haidler to make new investigations on this subject.

This chemist operated on pure and quite fresh cow's milk. Of eight cases, he found the reaction of milk slightly alkaline in seven, and acid in one; the last was obtained from a cow which had been ill a short time before. He first incinerated a portion of the milk in order to arrive at a general knowledge of its inorganic principles, and he found in the ashes, conformably with other analyses, chlorine, phosphoric acid, carbonic acid, and a small quantity of sulphuric acid, in combination with potassa, soda, lime, magnesia, and oxide of iron; he easily demonstrated in the serum of milk, coagulated by acetic acid, besides the presence of the bases which have just been mentioned, the existence of chlorine and phosphoric acid, but he never could detect sulphuric acid in it: it must, therefore, be regarded as a product of the oxidation of the sulphur contained in the caseïn. As regards the carbonic acid, its presence always observed in the ashes of milk, is indicated in most analyses as arising from a lactate supposed to exist in this liquid (lactate of soda). Haidlen has arrived at this result, that normal milk does not contain lactic acid, but that the formation of this acid commences immediately after it is drawn from the cow, and in some cases even in the animal, and that it then produces the acid reaction of milk: he has seen, moreover, that this liquid contains a quantity of phosphoric acid, precisely corresponding to the lime and magnesia which it contains.

If milk be coagulated by acetic acid, and if the serum be evaporated to dryness, and afterwards treated by alcohol, by the evaporation of the alcoholic solution and calcination of the residue, a mixture of salts is obtained which, dissolved in water, has a strongly alkaline reaction, and which, by the addition of acids, disengages carbonic acid; it is formed of alkaline carbonate, chloride of sodium, and chloride of potassium. Now, as normal milk does not contain lactic acid, with which this alkali removed by acetic acid can be combined, it would be very natural to conclude that it was in combination with the caseïn; in favour of this opinion is the circumstance, that pure caseïn is but very sparingly soluble in water, out of proportion with the quantity of this substance which milk contains; that, on the contrary, an extremely slight addition of soda or potassa is sufficient to immediately dissolve it, and that, not only do the alkalis exert this action on pure caseïn, but also that a very small quantity of alkali dissolves with the greatest facility a mixture of caseïn and phosphate of lime.

If it be admitted, as all circumstances authorise, that the pretended soluble modification of caseïn contained in recent milk, is nothing more than a combination of caseïn with an alkali, the phenomena of the coagulation of milk are explained in a simple and satisfactory manner. The action of the acids, as well as of the earthy and metallic salts, then, consists of a simple decomposition of caseïn. In the first case, free caseïn is obtained; in the second, an insoluble combination of this substance with the base of the salt which has operated the coagulation. This view also presents to us the best explanation of the coagulation of

milk by rennet. According to the observation of M. Pelouze, the immediate consequence of the action of the mucous membrane of the stomach on an aqueous solution of sugar of milk is a conversion of the latter, the principal product of which is lactic acid. Now, if, setting out from the moment when, under the influence of favourable external conditions, the rennet is in contact with the milk, lactic acid is formed, the period soon arrives (as the quantity of alkali combined with the easeïn is very small, 42 to 45 *milligrammes* in 100 *grammes* of milk) when the lactic acid formed is sufficient to saturate this alkali, and to separate the caseïn at a higher temperature. The analyses of Scherer, fully confirmed by those of Rochleder, have demonstrated that, in the coagulation of milk by an acid, the latter does not form any combination with the caseïn.

The salts of the cow's milk are, according to the above:—

Phosphate of lime.
Phosphate of magnesia.
Phosphate of iron.
Chloride of potassium.
Chloride of Sodium.
A combination of an alkali (soda) with caseïn.

The author found in 100 parts of milk from two cows:—

	I.	II.
Phosphate of lime	0·291	0·344
Phosphate of magnesia	0·042	0·064
Phosphate of iron	0.007	0.007
Chloride of potassium	0·144	0·183
Chloride of sodium	0·024	0·034
Soda	0·042	0·045
	0·490	0·677

It is not surprising that the quantity of salts contained in No. II. exceeds by more than one-fourth that of No. I., when we reflect on the great number of circumstances which may modify the concentration of milk: it is, on the contrary, interesting to have found in two different cows the same salts in perfectly similar relative quantities.

The author thinks he has discovered, in the course of his investigations, a method for the quantitative determination of the three most important principles of milk (caseïn, sugar of milk, and butter), exempt from the defects of the methods of separation hitherto employed, and very easily executed. The object of a new method of analysing milk, should, in his opinion, tend principally to determining with precision the sum of the fixed principles, and to put each body which ought to be isolated, in such a state that it dissolves with facility in its own solvent, and is perfectly insoluble in that of others.

Dr. Haidlen found these advantages in the coagulation of milk, by a suitable quantity of sulphate of lime. If milk be mixed with about one-fiftieth of its weight of this salt, in fine powder, and heated to 212° Fahr., a complete coagulation is operated, and by evaporating the whole to dryness, a brittle mass is obtained, which is easily pulverised; if it be reduced to a fine powder, the butter may be completely removed by ether, the sugar of milk and soluble salts by hot alcohol of sp. gr. 0·85, and an insoluble residue of caseate of lime and sulphate of lime remains. The alcoholic solution gives, with chloride of barium, a scarcely perceptible turbidness, whence it is evident that the sulphate of lime dissolved by the alcohol, givs no error in the result. 100 parts of milk gave by this method:—

Butter	3·0
Sugar of milk and soluble salts	4·6
Casein and insoluble salts	5·1
	12·7

Woman's milk, which the author had an opportunity of examining with relation to its proportion of butter, sugar of milk, and casein, had a very strongly alkaline reaction, and it was only difficultly coagulated by sulphate of lime.

No. I., of very good appearance, gave in 100 parts, 10·8 of residue, which was formed of:—

Butter	3·4
Sugar of milk	4·3
Caseïn	3.1
	10·8

No. II. at once announced, by its aqueous appearance, its poverty in fixed principles. 100 parts gave 7·2 of residue, which contained:—

Butter	1·3
Sugar of Milk	3·2
Casein	2·7
	7·2

*Feeding of Horses, Documents in Support of the Verbal Reply of M. Payen to M. Magendie.**

The Academy will permit me to submit to it some clear and positive explanations and proofs in support of the answer which I verbally returned to objections made by my learned colleague and friend, at the last sitting. And first, I may mention that, at the period when, at the kind request of M. Magendie, I was nominated a Member of the Commission of the *Amirault*, the absence of M. Boussingault had especially induced this adjunction; no responsibility can, therefore, devolve on him relative to the experiments undertaken by the Commission.

But I hasten to say that the facts proved by our *confrere* (Boussingault), in Alsatia, and without any communication on the subject having taken place, are perfectly in accordance with the results which I have communicated to the commission, and deposited in the hands of M. Magendie, our president.

This confirmation, obtained by works completely isolated and independent, is of a nature to inspire confidence; it may, therefore, be believed, that at Bechelbronn, as at Paris, the fatty substance is more abundant in the aliment with which horses are fed, than in their excrements.

It seems to us also true, that it is evident that at Giessen, as in France, and as in every country, the fruits of the graminaceæ, and of the cereals in particular, are organised in such a manner as always to present an oleaginous secretion near the surface of their pericarp and in the whole mass of their cotyledon.

That thus, neither the experiments of the commission, nor those of M. Boussingault, any more than the laws of vegetable physiology, could afford the slightest support to the ingenious hypothesis of the clever chemist of Giessen.

M, Magendie had in his hands all the documents proper for establishing and justifying the conclusions of our experiments. I was obliged to remit them to him, but it was permitted to me to keep an extract of them, and I am naturally warranted in depositing in the *Bureau* of the Academy, the first part of these documents, which relates to the questions discussed last Monday.

There will be remarked in it, a series of synoptical tables and successive observations, the first facts laid down, concerning the weight and condition of horses before and after certain alimentary regimens; the composition of the provenders and drinks; the comparative proportions of inorganic and organic substances in the aliments and in each of the dejections; the quantities of the aliments consumed; the analysis of the solid excrements and of the urine passed; the reaction of the latter; the influence of regimen on healthy horses, and on horses affected with glanders; the proportions of fibrin in their blood, &c. &c.

Doubtless much patience and labor will be required in order to arrive at definitive conclusions concerning these various points; the presence of M. Boussingault, and the unanimous concurrence of the members of the commission, will sustain our perseverance; but from this time, and in the interest of the part of the work which was entrusted to me, I ought especially to avoid consequences contrary to the observations getting abroad, and being accredited.

I am, therefore, obliged to set forth the facts as they have been given in our tables and the notes at the conclusion of the analyses.

The following is what is in reality met with in these pieces.

Two horses weighing together 940 *killogrammes*, submitted to feeding exclusively with hay, consumed in fourteen days 332 *kil.* of this provender, containing $6^{kil.}640$ of fatty matter; they rejected in 226 kilogr. of excrements, $3^{kil.}672$ of substance soluble in ether; that is to say, $2^{kil.}968$ less than their provender contained; moreover, the weight of each of the horses, instead of having increased, as M. Magendie thought, had really diminished—one 13 kilogr., the other 25; or 38 kilogr. the two.

These results are in perfect harmony with the observations made by MM. Dumas and Boussingault, and myself, both separately and together; they are then far from shaking our conviction; they have, in a word, a signification precisely contrary to that which remained on the mind of of M. Magendie.

In reading yesterday, in the *Comptes Rendus*, the reply of our *confrere*, I found in it numerical indications which were not given at the sitting, to which I am obliged to reply; they coincide neither with the ciphers, nor with the conclusions of the work undertaken by the Commission.

If M. Magendie had examined the comparison ready made on the third table of the same page, the illusions would have dissipated of themselves, for, in the fourth column of the consumption, we find for one of the horses, $2^{kil.}95$ of fatty matter of hay, corresponding to $1^{kil.}92$ and $1^{kil.}69$ of fatty matter rejected by the excrements; if, indeed, our *confrere* had taken the time to read the observations in the second page, he would have been completely satisfied as to the harmony which exists among all our results, by reading the following passage, which I have extracted verbatim, for notes intended for ulterior consideration.—

"The fatty matter found in the dung of horses eating hay alone, is about two-thirds of that contained in the hay."

If, therefore, there have been too much precipitation in this affair, it is evidently not on our side.

Since the period when my notes were first communicated to the commission, and left in the hands of our president, new facts have been collected for the same work, and if they were calculated to support the truth of the assertion, the first basis of which I have just removed, it would be my duty here to admit it; but it is quite otherwise.

Having remarked, that by means of a more complete mechanical division, a greater quantity of fatty matter may be extracted from the provenders, I repeated the first analysis with M. Poinsot, a young chemist, to whose care and accuracy I am happy to testify.

MM. Schmersahl and Berlioz were kind enough, at my request, to undertake some verifications on so important a subject, with their accustomed accuracy.

All these analyses also produced results agreeing with each other; I have here extracted only the data which are applicable to the controverted question.

It will readily be understood, that after the triturations exercised by the teeth and viscera of the animal, the residues of digestion, dried, ground in a mortar and submitted to the usual analysis, yielded nothing more by the effect of a new bruising, whilst the provender retained, in the portions of the vegetable tissues which were not lacerated, the enveloped fatty matter protected from the action of the solvents.

It is not astonishing, then, that the new means employed should have disengaged from the same hay 4·2 per cent, of its weight of adipose matter, instead of 2, which was at first extracted.

If this result be now introduced into the discussion of the facts debated, it will be seen that the 332 kilogr. of provender consumed, contained $13^{kil.}944$ of fatty substance, of which $3^{kil.}604$ or only about one-fourth, are found in the residues of digestion.

We have detected, moreover, the presence of minute quantities of a volatile, crystallisable, fatty acid, and of an oily matter, in the urine passed by

* Comptes Rendus, No, 11. Sitting of Academy of Sciences. March 13, 1843.

these horses: in taking account of these two substances, it would be necessary to add 127 grammes to the quantities excreted, which would cause no change in our conclusions.

A curious result of our last analysis indicated that straw, in the alimentation of horses, gives rise to a much less loss by the dejections, than hay,—a phenomenon which would coincide with the maintenance of horses in the best condition; it would also be in accordance with the practical observations concerning the advantages of this nourishment, and with our general theory of nutrition.

I should be fearful, in giving longer details, of trespassing on the attention of the Academy.

I request permission to express, in conclusion, my opinion concerning the discussion which has just been opened. Nothing more fortunate for our work could happen, I think, than an animated controversy, established by the friends of science, and which proves, at least, that this Memoir contains some new things; if, in the end, we are able to remove, one by one, all the serious objections; if we continue thus to inspire agriculturists with the desire of submitting our observations to the control of large applications, and of testing their accuracy; we shall be able, doubtless, to reckon on the assent of those who will have incited us to undertake new verifications; then also we shall have given complete satisfaction to our learned *confrere*, one of the founders of experimental physiology, to whom his own successes have given the right of being a little difficult.

M. Magendie replied: No one will suppose, I hope, that I contradict for the pleasure of doing so. If I indulged in some observations on the important work of my honorable brethren, it was because I thought them well founded, and of a nature to be submitted to them. If I am mistaken in the appreciation of certain parts of the table of which M. Payen speak, I am ready to own it. I am so much the more disposed to do so, as having been prepared under the eye of our colleague, this table must be more familiar to him than to me.

My calculation has been based on the result given by this table: I have admitted 2 per cent. of fatty matter in dry hay, and 6·5 per cent. in the dry matter of the dung; I afterwards compared the weights of the hay and of the dung, and it is after comparison that I have fixed my cipher. I will revise the table according to the indications which have just been given. I regret that M. Payen did not communicate them to me before the sitting, for if I had ascertained that they were just, I would have saved him the trouble of refuting my statement, by refuting it myself, according to the example which he has just set us. He informs us, indeed, that hay is no longer found to contain only 2 per cent. of fatty matter, as stated in the table quoted, but in fact 4·2 per cent. Such rectifications do honor to the philosopher, and profit science.

However, this conflict would not have been raised, if our honorable colleagues had taken the trouble to notice, in their Memoir, the quantity of fatty matter which the dejections contain,—a question which is very naturally raised by the letter of Professor Liebig.

I should say, in conclusion, that the point here controverted, although a very small part of what our brethren call their theory of nutrition, requires to be elucidated by a special discussion, as M. Payen has just expressed his desire.

M. Payen observed that, in the table in question, the results of three different regimens are given; the first of hay, the second of straw, the third of oats; that by adding all the numbers relative to these three sources of alimentation, comparable data could not be arrived at, at least taking account of the special compositions of every aliment and of each of the dejections.

He added that, finding in M. Magendie's reply the hope of an attractive discussion of the phenomena of digestion within the limits of scientific investigations, it is with the greatest pleasure that he accepted the augury of it.

The editers seem in a very cross humour with their riva tradesman, Mr. Bell; the source of which may be the *horribly bad* state of the Pharmaceutical Society's accounts, which contain on their face the sum of 1,078*l.* 10*s.* 3*d.*, as payment to Mr. Jacob Bell for his journal, and not to Messrs. Watt for the *Chemist.* Messrs. Watt argue, therefore, very fairly, that this sum might be annually spared the Society, and certainly that portion of the pharmaceutical community which embraces the editors of the *Chemist* would be nothing the worse for the economy. If Messrs. Watt be correct, indeed, the Pharmaceutical Journal will not be in much request before paper, as a *raw* has more value than as an elaborated material, for this is their courteous description:—"The journal is quite useless, unless it be to those who wrap bottles and pill-boxes in it—when, a'one, it may be said to contain *useful* matter." One is astonished, therefore, at the ill taste of the druggists who read it, and pay for it so disproportionally a high price; and thus, between their two organs, the druggists suffer crucifixion, buying the martyrdom also (an unheard-of self-sacrifice) in *hard cash:* one editor is paid for proving them smugglers, the other for establishing them as persons without taste or judgment. Poor druggists! Your journals are as active and depletory to you, as your stock in trade to other people. Our bowels yearn in compassion to you.

DR. DICKSON AND DR. LAYCOCK

To the Editor of the 'Medical Times.'

York, 5th August, 1843.

SIR,—The following extracts from my published papers contain an abstract of that "numerical mare's-nest," acknowledged by Dr. Dickson to be "assuredly" my own, as well as all the "low language" I have used respecting him in the *Lancet*. Conjoined with his acknowledgment, they constitute a sufficient and final answer to those parts of that person's letters which possess coherence enough to be intelligible. I subjoin a verbatim copy of one of these frantic productions.

I am, Sir, your obedient Servant,

T. LAYCOCK.

1. That there is a general law of periodicity which regulates *all* the vital movements in *all* animals.

2. That the periods within which these movements take place, admit of calculations approximatively exact.

3. That the fundamental unit, the unit upon which these calculations should be based, must, for the present, be considered as one day of 12 hours.

4. That the lesser periods are simple and compound multiples of this unit, in a numerical ratio analogous to that observed in chemical compounds.

5. That the fundamental unit of the greater periods, is one week, of seven days, each day being twelve hours; and that simple and compound multiples of this unit determine the length of these periods by the same ratio as multiples of the unit of twelve hours determine the lesser periods.

To prevent any controversy I would observe, that these propositions contain what I claim as my own. I lay no claim to the discovery of the idea of periodicity in vital function, nor of priority in the application of that idea; both of these have long been common property. I think, however, that I am the first who has demonstrated the law which binds all periodic vital phenomena together, the law which links the periods observed in the lowest annulose animals with those of man himself, the highest of the vertebrata.—*The Lancet*, vol. 1, 1842-3, p. 929.

One word on the claim to discoveries. I again repeat that the discovery of the *idea* of vital periodicity, or the first perception of that idea, is not mine. It would be just as rational to claim the discovery of the fact that two and three make five, as the discovery of that idea. What I appropriate is, *a law* of vital periodicity, not *the idea*; not that there *are* periods (every body knows that there are) but the principle, or law, by which *duration* of certain vital periods may be reduced to a common denominator. This is mine,—that the periods observed in the life of insects, the period of the incubation of the ovum, both of invertebrate and vertebrate animals; the periods of various functional acts and changes, as oviposition and nidification of birds, and menstruation in females; the critical days of fevers; the periods of agues; and the periods of paroxysmal diseases, as gout and epilepsy, are all reducible to a common denominator, are all governed, as to *duration*, by the same general law. I may be permitted to add that the demonstration (given in my last) of the identity as to length and division of the physiological, pathological, and meteorological day of twelve hours is novel. Now there is not one word of all this in the book of the unhappy man, whose disgraceful letters are recorded in the *Lancet*. He never even suspected these facts. In short, he has made no scientific discoveries whatever, and his charges of plagiarisms, both against Dr. Holland and myself are thoroughly contemptible.—*The Lancet*, vol. II, 1832-3, p. 443.

Verbatim copy of Dr. Dickson's letter. This was published in the *Lancet*.

To the Governors and Subscribers of the York Dispensary:—

Gentlemen, Clarges St.—April 6, 1843.

Herewith I forward to you a charge of piracy and literary swindling against one of your physicians, Dr. Laycock, which, for the honor of your charity, ought to be immediately investigated. To that person I have also forwarded a copy.

I have the honor to be, Gentlemen,

Your most obedient Servant,

S. DICKSON.

[This is Dr. Laycock's explanation in reference to the matters touched on in Dr. Dickson's note published a fortnight since. We cannot, of course, with our respect to justice, deny it admission, but think it not an improper moment, now that both sides have been heard, to close the correspondence. For the interests of peace, we must treat any further exchange of professional amenities on this subject as a luxury to be paid for as an advertisement.—ED.]

MR. ASTON KEY'S SECRET OPERATION AT GUY'S.

To the Editor of the 'Medical Times.'

SIR,—Aware of the deep interest that you take in the welfare of the Profession generally, whether it be connected with the progress of the student, or his conduct when no longer a student, but, in practice; I hesitate not to lay before you the following case; assured, that although redress may not be thereby obtained, I shall at least meet with your sympathy and that of the profession at large.

The public are aware that young men, qualifying themselves for the practice of the medical profession, pay to the surgeons of the different hospitals in London a large sum for the privilege of dressing their cases, and observing their practice. This has, hitherto, I believe, given a dresser the right of being present at all the operations that are performed at the hospital. It was for Mr. Key to break in upon this custom, and by a course of conduct upon which I will give no opinion, leaving it to the public to pass their judgment upon the matter, to debar him from benefits to which he is justly entitled, inasmuch as Mr. Key and the other surgeons have received his hard cash in payment thereof.

The facts of the case, upon which I wish your opinion, are simply these:—There has been in Guy's Hospital for some short time, *a most interesting case*, and one in which the dressers, (and a brother student, a dresser also, more particularly,) much interested themselves. It was expected that Mr. Key would operate, (it was the removal of an ovarian

cyst), and the dressers watched the case narrowly, (for they are not altogether unaccustomed to Mr. Key's ways,) in order that they might be present at its removal. The day before the operation was performed, Mr. Key walked up to the dresser of a brother surgeon, and gratuitously, the information being unasked for, told him that he should not operate for three days. The gentleman in question, upon the receipt of this direct intimation from Mr. Key, in some measure relaxed his vigilance upon Mr. Key's movements, and did not stop at the Hospital the next day as long as usual. You may imagine his surprise upon visiting the Hospital the next day after to find that the operation had been performed the day before. It seems so determined was Mr. Key to perform it without the presence of the dressers of the other surgeons that he actually told his own dressers the same thing, but at the same time intimated his particular wish that they should be at the Hospital on the next day at a given time. His dressers, more accustomed, it would seem, to the devious paths in which it is Mr. Key's pleasure to move, brought their friends with them; and it turned out that their anticipations, although in direct antagonism with the expressed avowal of Mr. Key, were correct, and the operation was performed in the presence only of Mr. Key's dressers and a few of their friends.

Now, I ask you, Sir, whether this is the treatment that the dressers of the other surgeons have a right to expect, or be satisfied with, from Mr. Key? Is it right—is it fair that those young men who have paid their money for their dresserships should, by a kind of jugglery on the part of Mr. Key, be deprived of the advantages to be derived therefrom? I put it, Sir, not as point of favor—not as a matter of courtesy, but I say that the dressers of all the surgeons had a right to be informed of the time of the operation so that they might be present if they pleased.

What reasons Mr. Key may have had for his mysterious, and devious course of conduct I, of course, am not able, and, probably, he himself will be unwilling, to say; but although he may think himself too far above a dresser, or your humble correspondent to deign any explanation, I tell him that surgeons retain their rank at the head of their profession, not only by the skill and manual dexterity which they may possess, but also by manly, honorable and straight-forward conduct in the pursuit of that profession.

The above is making a considerable stir at Guy's, so that you will not need my name in confirmation thereof, the proofs of it being *passim*. You will be too well aware, I am sure, of the unpleasant feeling that a complaint of this kind might engender between a surgeon and a pupil (although I do not say that I am a pupil) at an hospital, not, Sir, to accord me your permission to write under an anonymous signature. But I feel bound to assure you that I am not a dresser, and, therefore, am perhaps the more likely to be uninfluenced by the jealousies which sometimes exist between rival dressers as to the respective merits of their different surgeons.

I am, Sir,
Your obedient servant,
UBI DOLOR, IBI DIGITUS.

Thursday, Aug. 3, 1843.

[If this be a correct version of the facts (and we find that general opinion at Guy's so represents them,) Mr. Aston Key has thrown himself into a very false position. If he have so fixed an aversion to publicity in his operations, it is truly unfortunate for him as an Hospital Surgeon, a position which makes him essentially a *public* operator. With a sensitive or timid person it is easy to believe that the critical gaze of a large crowd is capable of doing mischief: it may ruffle and unnerve at the moment when a life is dependent on perfect self-possession and steadiness. But, then such a gentleman should not be an Hospital Surgeon: and least of all—if he will continue in office—should he resort to what looks like a mendacious shift to escape a circumstance which might be got rid of in a much more honorable and manly way. But we must not be premature: Mr. Key has, perhaps, been misapprehended, and in that sincere hope we shall be glad—glad indeed—to publish from him a satisfactory account of what may be accounted for if false, but cannot be defended if true.—ED.]

UNIVERSITY OF LONDON.

FORTY-ONE CANDIDATES PRESENT THEMSELVES AT THIS EXAMINATION.

Bachelor of Medicine.—Pass Examination, 1843.—*Monday, August 7.—Morning*, 10 *to* 1, —*Anatomy and Physiology.*—Examiners, Mr. Kiernan and Prof. Sharpey.—1. A vertical section of the Skull being made in the median plane, and in the dry state, and the septum nasi being removed, describe the parts brought into view. Commence the answer by enumerating the bones divided in the section, and proceed with the description in the following order, mentioning the processes and depressions and foramina,—1st, the inner surface of the cranium; 2nd, the roof, floor and outer wall of the nasal cavity; 3rd, the roof of the mouth and inner surface of the inferior maxillary bone. The attachments of muscles not required.—2. Commencing the dissection at the Integuments, and proceeding with it as far as the outer surface of the Internal Pterygoid and the Styloid muscles, describe the parts successively exposed in dissecting the space bounded above by the Zygoma, below by the base of the inferior maxilla, in front by the anterior margin of the Masseter, and behind by the Meatus Auditorius, Mastoid process and upper part of the Sterno-Cleido-Mastoideus.—3. Give the anatomy of the external circumflex artery of the Thigh; state the steps of the dissection required to display it in its entire course, and describe the parts exposed in the dissection.—4. Describe the soft parts met with in dissecting the anterior and outer region of the leg, and the dorsum of the foot.—5. Give a description of the Duodenum, comprehending its form, situation, connections and structure, its vessels and nerves, Brunner's glands, and the mode of opening of the biliary and pancreatic ducts.

Bachelor of Medicine.—Pass Examination.—Monday, August 7.—Afternoon, 3 *to* 6.—*Anatomy and Physiology.*—Examiners, Mr. Kiernan and Prof. Sharpey.—1. The Vertebral Column and the rami of the lower jaw being removed, describe the external surface of the Phraynx, the attachments of its muscles, and the course of their fibres; and the muscles of the soft palate as far as they can be seen in this stage of the dissection. The pharynx being opened from behind, describe the parts then brought into view; the description to include that of the posterior nares, the soft palate, its arches and muscles, the isthmus faucium, the dorsum of the tongue, its glands and papillæ, the Epiglottis and its folds, and the superior aperture of the Larynx.—2. Give the dissection required to expose the internal pudic artery and its branches, after it has turned round the spinous process of the ischium; commencing the dissection in the perineum, and describing the parts which successively appear in the progress of it.—3 Commencing the dissection at the inner surface of the lower portion of the anterior wall of the abdomen, at a transverse line drawn from the anterior superior spinous process of the Ilium to the mesial line, and dissecting from above downwards, and from the peritoneum to the integuments, describe the parts successively exposed, particularly with reference to the Inguinal canal, its contents and boundaries.—4. Give the structure and chemical composition of Muscular tissue, the arrangement of its nerves and blood-vessels, and the difference in structure between voluntary and involuntary muscles.—5. By what mechanism is air introduced into and expelled from the lungs in respiration? Enumerate the muscles which are constantly, and those which are only occasionally employed in inspiration and expiration.

Bachelor of Medicine.—Pass Examination.—Tuesday, Aug 8.—*Morning* 10 *to* 1.—*Chemistry.*—*Examiner*, Prof. Daniell.—1. A saline powder will be placed before you with a blowpipe, lamp and charcoal: test the powder, state its composition, and describe the phenomena which it presents by the application of the flame, and explain their causes.—2. A saline solution will be placed before you marked A, with appropriate tests: explain the changes which will take place upon their application, and name the acid and base of which the salt has been composed.—3. What was the great fault of the Thermometer as originally constructed by the Italian philosophers at the beginning of the 17th century? and how was it corrected by Sir Issac Newton?—4. Describe the processes by which uniformity of temperature is brought about in a system of bodies originally of different temperatures, and the principal circumstances which influence each.—5. Describe and explain the principal phenomena of Electric Induction.—6What were the respective shares of Galvani and Volta in the discovery of Galvanism or Voltaic Electricity? Describe and explain the fundamental experiments of each.—7. What are the principal advantages which the science of Chemistry has derived from the establishment of Dalton's Atomic Theory?—8. How may the presence of Nitrogen be detected, and its amount be ascertained in an Organic Compound?—9. What is Phosphorus? State its principal physical properties, its equivalent number, and describe its combinations with Oxygen.

Bachelor of Medicine.—Pass Examination—Tuesday, Aug. 8—*Afternoon*, 3 *to* 6.—*Materia Medica and Pharmacy.*—*Examiner*, Dr Pereira.—1. Describe the method of preparing the *Antimonii Potassio-tartras* according to the London Pharmacopœia, and explain the chemical changes which attend the process. State the composition, effects, uses and doses of this salt, and also the tests by which its presence may be recognized.—2. Give the botanical character of *Aconitum Napellus*. Mention the peculiarities of its action on the system; name the diseases for which it is especially adapted; and state the best mode of using it externally as well as internally.—3. How would you distinguish *Liquor Sodæ effervesceus*, Ph. L., from mere carbonic acid water? With what metal is the Soda Water of the shops frequently contaminated, and how would you detect the impurity?—4. What are the appropriate doses, for an adult, of the following substances: Benzoic acid, sal ammoniac, trisnitrate of bismuth, biniodide of mercury, and bromide of potassium?—5. How would you detect the adulteration of Balsam of Copaiba with Castor Oil?—6. Enumerate the principal Cathartics. In

how many groups or orders may they be conveniently arranged? What are the peculiar effects and uses of each group?

Bachelor of Medicine.—Pass Examination.—Tuesday, August 8.—*Afternoon*, 3 *to* 6.—*Structural and Physiological Botany.—Examiner*, Prof. Henslow—1. Compare a campanulate with a rotate corolla: and a corymbiform with an umbellate inflorescence. Illustrate your comparison by a slight sketch of each.—2. Whence does the Arillus originate? Name two good examples of plants of different families in which it occurs.—3. How do you explain the formation of central and parietal placentæ? Name an example of each.—4. What is the nature of vegetable Albumen? Is it found in the seeds of ranunculus, pisum, sinapis, primula, and geranium?—What is a stipule? Are the plants in rosaceæ, leguminosæ, cruciferæ, generally stipulate or not?—6. How is the genus cuscuta supplied with nourishment? What peculiarity is observable in the structure of its embryo?—7. What are "adventitious buds"; and how do you suppose they have originated?—8. 9. 10. Describe these specimens.

MEDICAL NEWS.

Rights of Apothecaries. — An action was tried at Durham, July 31, brought by the Apothecaries' Company against a Dutch Jew, for practising and charging as an apothecary. It appeared that he had attended several parties, and had sent them bills in which distinct charges were made for medicines prescribed in cases not surgical. It was contended for the defendant, that he styled himself a surgeon, and acted as such. The judge (Cresswell) in summing up, having expressed his opinion that that was not the case, and that, further, the defendant could not be considered acting as a chemist, since the chemist's business is merely to sell medicines asked for, whereas the defendant had *selected* and *considered* the medicines which he ought to give; the jury found a verdict for the plaintiffs.—[This is a case now of little importance, since it only confirms what has been before often established. It leaves quackery, when acting under the guise of pure surgery or physicianship, and charging only for attendance, in the same place precisely as before.—Ed.]

Medical Charter.—The Secretary of Sir James Graham, in a letter dated July 17, says, "A new Charter is about to be granted to the College of Surgeons by her Majesty." It is strange Sir James should have spoken so obscurely on the subject so much later.

Provincial Medical and Surgical Association.—This body has held its annual meeting. Nothing occurred in it to require public notice. It has done nothing, and we believe, in the present aspect of public affairs, hopes to do nothing. We have a report of its proceedings before us, of some length. Nearly a hundred members were present it would appear, but it was merely occupied in the reading of a few medical papers, and discussing a notice of motion by Dr. Cowan to raise the subscription from one guinea to thirty shillings. One of the papers was by Mr. Sibson, on the relative positions of the different internal organs of the trunk—who also shewed an apparatus invented by Mr. Waterton, of Walton Hall (the traveller), for carrying on artificial respiration during suspended animation. A dinner was held on its last day of meeting, Thursday, Mr. Hey in the chair. The other speakers were, Dr. Hastings, Mr. James, of Exeter, Mr. Newnham, Dr. W. Conolly, &c. Dr. Streeten is the present secretary, vice Hastings and Shephard. His salary is 100*l*. a year.

PERISCOPE OF THE WEEK.

(Dublin Journal of Medical Science—British and Foreign Medical Review—Lancet—Medical Gazette.)

Statistics of Midwifery.—Since the establishment of the Western Lying-in-Hospital, seven years ago, 3,211 women have been attended, of whom 15 died, or 1 in 214. There occurred 4 cases of unavoidable hæmorrhage, 1 in 802; six cases of accidental hæmorrhage, 1 in 525; 34 cases of hæmorrhage after labour, 1 in 94; 10 cases of convulsions (3 lost), 1 in 321. Version was practised in 17 cases, 1 in 188; 16 recovered: 6 children saved. The forceps were used in 11 cases, 1 in 291; 10 recovered, 7 children saved: 2 putrid. The perforator was employed in 20 cases; 1 in 160; 17 recovered. During the two years, from January 1st, 1841, to December 31st, 1842, 1506 women were attended, but as the cases were not all properly entered in the statistical register, the record is limited to the delivery of 1206 women; from these must be deducted 43 cases of abortion, leaving 1163 cases of labour at the full time. The number of children amounted to 1175 (691 males and 484 females) of which 63 (44 males and 19 females) were still-born, or died at birth; of these 12 were premature, 15 still-born, 2 putrid, 4 footling cases, 8 breech presentations, 1 head and hand presentation, 3 arm presentations, 3 funis do., 6 crotchet cases, 2 forceps cases, 1 placenta prævia, 4 syphilitic. The entire duration of labour in 982 cases was as follows:—In 357, under 6 hours, in 312, between 6 and 12 hours, in 214, between 12 and 24, in 50, between 24 and 36, in 17, between 36 and 48, in 11, between 48 and 60, in 15, between 60 and 95, in 2, 100 hours, in 3, 131 do., and in 1, 153 do. The extreme duration of some of these cases was owing to the application for assistance being deferred. The period between the commencement of the labour and the rupture of the membranes was noted in 981 cases. In 167, it was about 2 hours, in 335, between 2 and 6, in 165, between 6 and 10, in 113, between 10 and 14, in 71, between 14 and 18, in 33, between 18 and 22, in 46, between 22 and 26, in 23, between 26 and 30, in 8, between 30 and 38, in 9, between 38 and 40, in 4, it was about 50 hours, in 2, 60 do., in 1, 70 do., in 3, 80 do., and in 1, 105 do. In 812 cases, the interval between the rupture of the membranes, and the birth of the child, was as follows:—In 396 it was about 1 hour, in 142, 2 do., in 120, 4 do., in 50, 6 do. in 34, 8 do., in 17, 10 do., in 26, 25 do., in 11, 20 do., in 9, 28 do., in 4, 35 do., in 1, 40 do., in 1, 50 do., in 1, 120 do. In 953 cases, from the birth of the child to the expulsion of the placenta, there elapsed, 5 minutes in 98 cases, 10 do., in 190, 15 do., in 175, 20 do., in 166, 25 do., in 48, 30 do., in 126, 35 do., in 16, 40 do., in 30, 50 do., in 43, 60 do. in 14, from 1 to 2 hours in 33, 2 to 3 do. in 9, 3 to 4 do, in 5. In 1008 cases the presentation was as follows:—In 941, the head, in 13, the hand and head, in 22, the breech, 8 dead, and 18 the feet, 4 dead, the funis prolapsed in 3, in 6 the funis, 4 dead, in 5 the arm, 3 dead, 2 putrid, in 2 the placenta, 1 dead. There were 13 cases of twins, in 4, natural presentations, 6 children lived, 2, premature, died. In 6 cases, one head and one breech presentation, 10 children born alive, 2 dead. In 1, a head and footling case; both saved. In another, the head and funis, and the foot and funis; both lost. In a third, the feet and funis; both lost. In 10 cases, hæmorrhage between the birth of the child, and the expulsion of the placenta; in 6, its extraction required; in 6, flooding before delivery, 3 accidental, and 3 unavoidable. Version required in 2 cases; 1 mother and 1 child died. There were 7 cases of convulsions; all recovered. 1 fatal case of uterine phlebitis, and several slight ones of hysteritis, which were cured, and one fatal case of ruptured uterus. Version was performed 6 times, 1 in 243, 5 for arm presentation, 1 for hæmorrhage. The forceps were used 8 times, 1 in 182; 7 of the mothers recovered, the other died of diseased heart. Perforator used 8 times, 1 in 182; 6 of the mothers recovered, 1 died of ruptured uterus, 1 of disease of the liver. Of the 1463 women attended during these 2 years, only 5 died, or 1 in 292; 1 from diseased liver, 1 from diseased heart, a 3d from hæmorrhage, a fourth from uterine phlebitis, and the 5th from ruptured uterus.

Floating of the Lungs in Water.—Lungs will not float in water, when only a small part of their structure has been filled with air, when they are incompletely developed, or only expansible in certain insulated portions. It is a well-known fact that children may live and breathe a short time, provided only a very small portion of the lungs receives air, and they have been known to cry several times, when after death it has been found that only a few detached parts of the lungs had undergone respiration. The lungs of children, which are immature, are very likely to be found in this condition, since these subjects may commence, but have not the power to continue, the process of respiration, or to give to the chest its full degree of expansion. This state is what has been termed *atelectases* by Jorg. Two cases have occurred to Dr. Nicolai, in which the lungs of one side of the chest floated, and those taken from the other side sunk. These latter were of a dark red colour, resembling the liver in consistency; they were congested with blood, and on compressing them, a bloody purulent matter oozed out. Both children had lived, the one two days, the other three weeks.

Decay of Bones after Various Periods of Interments.—In determining for how long a period bones may have remained interred in the ground, says Dr. Nicolai, it is necessary to consider the age of the individual, for this materially affects the rapidity of decomposition, as does also the kind of soil in which they have been interred. The bones of subjects abounding in liquid matters, of young persons and children, undergo decay with greater rapidity than those of old and emaciated subjects. The firm and hard bones resist decomposition longer than those which are soft and cartilaginous. Soils formed of loam or compact clay retard these changes in the bones, but in light sandy or calcareous soils decomposition is accelerated. The more freely bones are exposed to the air, the more readily do they become decomposed. In general, the soft putrefaction of bone ceases in about twenty or thirty years from the time of interment. After this period all the soft parts are destroyed, they are deprived of gelatine, and will be found hard and porous. The cartilages disappeared with the marrow and the fatty parts. If in examining the bones, any of the soft parts remain, if they are oily and moist, and still contain within them some marrow, it may be inferred that they have lain in the earth from ten to fifteen years. If the bone readily crumbles under pressure, and is rough and porous throughout its whole substance, it may be presumed that it has been in the ground forty, fifty, or even one hundred years.

UMBILICAL HERNIA COMPLICATED WITH ABDOMINAL ABSCESSES.—A very corpulent woman, 45 years of age, the subject of umbilical hernia for many years, was attended by Mr. Wade, her bowels not having satisfactorily acted for a week, and there having been stercoraceous vomiting for three weeks. The pulse was small and frequent, countenance pale and anxious, and there was extreme tenderness on pressure over the tumour. Having failed to reduce the hernia by the taxis, Mr. Wade operated, when he found general adhesion of the protrusion to the sac, with the exception of a small fold of intestine, which appeared to have been recently forced down, and which he returned. One part of the sac was very hard and thickened, as well as adherent to the hernia, and Mr. Wade tried to separate it, but could not succeed at the time, but finding, after the lapse of some hours, that no relief had followed the operation, but that, on the contrary, all the symptoms were increasing in severity, he re-opened the tumour, and succeeded ultimately in detaching the intestine from the indurated portion of the sac. This proceeding was followed by the administration of a turpentine enema, which in two hours', time caused a copious feculent evacuation, the stercoraceous vomiting having ceased. The patient was apparently doing well for several days after this, but on the 5th, on removing the sutures, it was found that no union of the skin had occurred, and that some parts of the sub-cutaneous cellular tissue were in a sloughy state. Subsequently to this, deep sinuses were discovered extending from its lower part, which were freely laid open. The first was incised to the extent of about four inches, when it was found to communicate with a deep-seated abscess of considerable size, lined by a distinct cyst, from which several other sinuses branched off in various directions. The occurrence of the inflammation which produced this amount of mischief was traced to a blow received on the part about three months previously. Again the patient appeared to be doing well for four or five days, when restlessness and rigors were experienced, and more deep sinuses, leading to a recently-formed abscess, surrounded by disorganised cellular membrane, was discovered. One of the sinuses, a very narrow one, passed to the extent of four inches through a mass of thickened omentum. All these were fairly laid open, either by the knife or blunt-pointed scissors, great care being taken to control hæmorrhage. After this, no further bad symptoms shewed themselves, and the patient got well. The details of this case speak highly in favour of Mr. Wade as a clever surgeon, and he deserves great credit for conducting it to a successful termination; we are, however, inclined to differ with him as respects the nature of the injury. He regards it evidently as a case of strangulated hernia; whereas, from all the circumstances of the case, it appears to us to be one of deep-seated inflammation of the cellular, and perhaps muscular tissue, surrounding a long-standing umbilical hernia, terminating in the formation of a large abscess, and causing the symptoms which led Mr. Wade to believe in the existence of strangulation, by the propagation of the irritation to the adjacent parts. The contents of the sac were evidently in a diseased state, and the thickened omentum was also involved in the inflammatory and suppurative action, a state of the parts which will fully explain the occurrence of stercoraceous vomiting, anxiety of countenance, great tenderness of the hernia, small and frequent pulse, &c. &c.

PUERPERAL CONVULSIONS.—Dr. Collins says, I conceive we are quite ignorant, as yet, of what the cause may be; nor could I ever find, on dissection, any appearances to enable me to even hazard an opinion on the subject.

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of Gentlemen admitted Members on Friday, July 31st, 1843:—

T. B. Oldfield, W. H. Rogers, J. Topham, R. Hodges, M. J. Rowe, W. J. Lomax, H. B. Davies, B. J. Webb, W. Leshley, A. G. Montgomery, T. R. Evans, T. Nicholas.

Admitted Friday, August 4th, 1843.

Z. L. Pocock, A. Poland, E. J. Kennedy, W. Pearson, J. Reid, G. S. Deane, H. Mitchell, F. Cheesman, T. Moore, J. Stevens, E. J. S. Whitmoore.

ADVERTISEMENTS.

London: Printed and Published by JAMES ANGERSTEIN CARFRAE 49, Essex Street, Strand, in the Parish of St. Clement Danes Westminster, in the County of Middlesex.—August 12, 1843.

THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 204. Vol. VIII. LONDON, SATURDAY, AUGUST 19, 1843. PRICE FOURPENCE. STAMPED EDITION 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per half-year, Post free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE IX.

3. *Asphyxia by mechanical obstacle and by occlusion.*—Asphyxia, by occlusion, may be produced by any species of body, whether introduced or formed within the air passages, and which is capable of obstructing these tubes. Animals, which respire by means of a branchial apparatus or gills, are not liable to this kind of asphyxia. The mechanical obstacle may be confined to the larynx, or it may be situated at a variable point of the trachea, in the bronchi, and even in the pulmonary cavity. The symptoms and gravity of the accident vary according to this circumstance. This kind of asphyxia may then be divided into three principal groups: asphyxia by the introduction of a foreign body, whether solid or liquid, into the respiratory passages; asphyxia by the development of a parasitical tissue in these passages, and asphyxia by their mechanical contraction.

1°. *Asphyxia by the introduction of a solid body.*—The stone of a fruit, a pea or a bean, a piece of bone, &c., by passing along the wrong passage, and penetrating into the trachea, or even stopping in the larynx, have sufficed in numerous cases to produce suffocation, where the resources of art have failed in removing the obstacle. In such cases, the blood being obstructed in its passage by the continuous tumefaction of the lungs, is forcibly driven back towards the head; the face becomes puffed up, the eyes project from the orbit, and the conjunctiva is injected with blood; all the tissues assume a purple colour; and the animal drops down without a struggle, if the occlusion is complete. If the occlusion, however, be incomplete, and the air be able to arrive, by some gap or fissure, at the pulmonary surfaces, then the asphyxia is less speedy and more distressing; the violent efforts made by the patient to draw air into his lungs, are productive of great suffering, and frequently terminate in convulsions. The oxygenation of the blood taking place in a more and more imperfect manner, venous blood passes into the arteries, and the surfaces of the body assume a livid tint, instead of their natural hue.

Asphyxia, by occlusion, is complicated with both of the preceding species, when occasioned by the introduction of an intestinal worm, or of a leech, which shall have abandoned its place of application, and insinuated itself into the larynx. Horses and animals put out to grass, upon the borders of stagnant waters, are exposed to this kind of asphyxia; for it is not uncommon with them to swallow leeches, while drinking freely. We shall have to return to this subject when treating of morbiparous insects; but we may here remark, that many cases of so-called sudden apoplexy or syncope, are perhaps merely instances of this kind of occlusion, especially in young children. We shall not here dwell on the introduction of foreign bodies, under the form of dust or such like substances, which cannot be said to constitute causes of aphyxia by occlusion, but which belong in reality to another order of morbid phenomena, of which we shall speak lower down.

2°. *Asphyxia by occlusion, arising from the introduction of a liquid body into the respiratory passages.*—It frequently happens that a certain quantity of liquid, in the act of drinking, takes its course along the larynx, if any spasm be present in the glottis; but as this quantity of liquid is never so considerable, as to invade the whole pulmonary capacity, and from the very yielding nature of a liquid substance, it follows that the volume of air which fills the lungs, has always power to drive it outwards, by one or more efforts. When it is not accomplished by the first attempt, the liquid is partly expelled by expiration; but, in inspiration, the remaining portion is drawn deeper into the pulmonary cavities, and thus determines more or less violent fits of coughing, and convulsive attempts to expel the fluid. The lung then performs the office of a forcing-pump; and the liquid, thus actively expelled, escapes mechanically by all the passages open to it, by the mouth, behind the velum of the palate, by the nose and even by the nasal canal, thus inundating the eyes with tears; the effect of these actions is to drive the blood towards the head, causing congestion in this region, the gravity of which seems to vary according to the constitution and predisposition of the individual. But if such an accident happen in an individual already enfeebled by long disease, who may be lying on his back half deprived of the use of his limbs, who shall be incapable, in fine, of favouring the various movements by means of which the respiration frees itself from the liquid obstacle, it is possible that the asphyxia may become fatal, however small the quantity of liquid drawn in. So also with the new-born child, unless, when this accident happens in consequence of suckling, the nurse have the precaution to turn the child in various directions, and shake it with a certain degree of violence. Oil, when introduced into the lungs, or merely confined to the trachea, would produce these results more speedily, not only from the faculty which it possesses of absorbing oxygen, but also by forming an impermeable obstacle to the external air. Every body knows how readily an insect, as for instance, a caterpillar, may be killed by carefully spreading, with a brush, a layer of oil over their respiratory stigmata.

Such is what occurs, while the respiratory organ is separated from the atmosphere merely by a certain quantity of liquid interposed in the primary air passages. But every thing changes, when the terrestrial animal is submerged, and can no longer move but in the medium of water; not to speak of liquids, which, by their nature, increase the asphyxia, by the complication of poisoning. Asphyxia in water, otherwise called submersion, does not suppress the respiration suddenly; the animal does not die instantaneously, as is the case when plunged into a medium entirely deprived of respirable air. For water is a respirable medium for animals formed in a manner favourable to this kind of elimination, though it is but imperfectly respirable to others; water, in fact, is always saturated with atmospheric air; and we have shown, in a former lecture, that aerial respiration takes place only through the vehicle of the aqueous element. While, then, the lungs may be filled with water, the respiration will not be immediately suppressed; the respiratory surfaces will for the instant assume the office of *branchiæ;* they will despoil the adjacent water of the quantity of air with which it is impregnated. But the water here performs the function of a non-respirable fluid interposed between the molecules of the respirable air; and asphyxia, by submersion, may thus be classed, as a peculiar and simple modification, in the division of asphyxia by addition (see last lecture). The lungs no longer receive the quantity of respirable air, which they are capable of containing; nor in the proportions required for the elaboration of each respiratory cell; there is a feeling of suffering and privation, but still a consciousness of position and of danger. The animal struggles for some time against the obstacles to its life; it grasps with its feet and hands at every branch which offers it a chance of safety; its struggles raise it and bring it to the surface, but its own weight causes it to sink again to the bottom: this combat cannot last long, for the powers which save it from danger are quickly exhausted; the intelligence, which governs and directs these powers, is soon obscured, when the lung becomes asphyxiated; and this body, now immovable, remains at the bottom of the river, rolled about by the deeper currents, like a log of oak, until, becoming infiltrated by the gases of its putrid fermentation, it is brought to the surface, by the specific lightness of its own decomposition, to sink again for the last time to the bottom of the waters, as soon as the work of fermentation shall be succeeded by that of the assimilation of its earthy bases, and, so to express myself, of the aqueous fossilization, which takes place in the tissues of the corpse, and which seems to protect them against further corruption. The corpse now becomes white as a piece of Parian marble, and glossy upon its surface; so entirely does the coloring matter of the blood seem to have been washed away by the action of the water.

If, however, a helping hand rescue the poor being from a watery abyss, all danger is not passed when he has reached the shore. After having saved him from the water, it is necessary to guard him against the danger of its consequences. It is not cerebral nor any other congestion which is so greatly to be feared; for the blood has acquired, by imbibition through the surfaces, in aqueous particles, what it has lost in its degree of heat. All is still liquid in the canals and reservoirs of the sanguineous circulation; there are no clots distending the left ventricle of the heart, as in cases of dry asphyxia. All is still liquid; but nothing circulates; and frequently, on opening a vein with the lancet, no blood escapes; for venesection is powerless, when unaided by aspiration and expiration in the tissues,—those two sole movers of the sanguineous circulation. Let us now, however, consider what happens, as a result of the action of physical laws, in the various positions which declivity or external circumstances imprint on this body, the plaything of the waters, and now the plaything of chance and of treatment.

If the body be attached by its feet to a branch of a tree, with the head vertically downwards, it is evident that the water ingurgitatd into the lung will fall, by its own weight, toe wards the trachea. But there it meets with two obstacles to its passage outwards; the closure of the passage by the epiglottis, which becomes drawn down by the dilatation of the trachea and larynx, and especially the equilibration of the column of atmospheric air. In fact, the little air contained in the lungs, and which is deprived of its oxygen, cannot be in a condition to counterbalance the weight of the external air; the water will thus be retained in the inverted lung, as it were by a barometrical vacuum; the air-passages will be closed to the external air, and asphyxia, from water, will continue in the midst of the atmosphere. We may partly understand this from the difficulty, and not unfrequently the impossibility, which we find in emptying a bottle with a narrow neck, when held inverted in a per-

pendicular direction. Asphyxia will also take place in the erect position, when the head is directed upwards. This result is, however, brought about in a different way; for, obeying its own weight, the water will cease to block up the trachea and bronchi; but it will be carried into the anfractuosities of the lung, and will thus intercept the contact of the air. The pulmonary expiration has, in neither case, the power of removing this obstacle to the respiration. We have shown, in a former lecture, that the respiratory surfaces do not attract the air at a distance, and that the pulmonary capacity renews the air which distends it, only by the elaboration of the layer of air which covers its surfaces. As soon as this superficial portion of air is exhausted, the function of the surfaces is interrupted; they cease to aspire and to expire. Now, in both cases, the material and food of these functions is soon lost to the lung. Suppose, again, that the body be extended upon an inclined plane, with the head a little lower than the feet. If it be placed upon the back, the weight of the water, keeping up a compression upon the lungs in the dorsal concavity, will produce similar effects to those observed in the upright position. If, on the contrary, the body be placed upon the belly, in a nearly horizontal position, it will follow that the water, occupying the lower portion, will divide the interior of the lung into two layers, the one occupied by the liquid, the other by the air, and that the line of separation of these two layers, passing along the axis of the trachea, will allow free access to the external air; the lungs will thus be enabled at once to re-ommence their function of respiration; for, we shall have established, in their interior, two opposing currents: the one of water, which will escape outwards, and the other of atmospheric air, which will pass into their cavity. If we empty a bottle in these different positions, we shall better understand the mechanism of this phenomenon.

But this mechanism must necessarily be modified, according to the individual conformation, and especially according to the organization and the specific structure of the animal: a quadruped not presenting, towards the escape of the ingurgitated liquid, the same inclination, in the same position, as man and the quadrumani. We must then in this, as in all other questions of comparative and experimental physiology, guard against applying to man, in an exact manner, the results furnished by experiments upon animals.

3°. *Asphyxia by the development of a parasitic tissue in the air-passages, and upon the respiratory surfaces.*—This development is the morbid effect of a cause which we shall not here enquire into; an effect, in its turn, becoming the cause of disturbance, which, when prolonged, leads to death. These tissues develope themselves more frequently in the infant than in the adult; and at the adult age, we meet with them only in lymphatic subjects, adopting a low and debilitated regimen, or in such as suddenly abandon a highly-seasoned diet, with the habitual use of alcoholic liquors, for innutritious and spare food; we shall give an explanation of this circumstance, in its proper place. We must, here, content ourselves with observing that the parasitic development takes place with such frightful rapidity, that, if the resources of art do not paralyse and arrest its progress, the patient is suffocated in a very short time. We then find the trachea blocked up by a cylindrical mass, of the same diameter and frequently of the same length as this tube itself, and which becomes moulded upon its sides, so as to receive the full impression of all its irregularities of surface. The respiration continues, so long as the diameter of the parasitic cylinder does not fully coincide with that of the trachea; but, when the tube or cavity, in which the voice is formed, becomes more and more narrowed, the expiratory efforts are transformed, according as the parasitic tissue is seated above or below the vocal chords, and at various altitudes, into sounds of a different character and of different intonations, capable of running through the whole chromatic scale and several octaves successively; phases, during which the cough assumes the characters of violent paroxysms of hooping-cough, and, subsequently, the *croupy sound*,—a sound or cry which indicates the most imminent distress and danger. The neck becomes swollen, the face puffed up, the eyes project from the orbit, the skin is injected with a dark-coloured blood; this convulsive condition is succeeded by total prostration; and the struggle is terminated, unless the obstacle be expelled by art, or another opening be made, for the external air to reach the interior of the lung. But if, even at the last moment, the expulsion of this organised mass be brought about by some violent effort, the infant is preserved from the threatening danger; it is not, however, cured of the disease which gave rise to these developments.

Plants, as well as animals possessed of gills, are liable to a similar kind of asphyxia; for it frequently happens, especially when their tissues, being transported into a less favourable medium, become inactive and languishing, it happens, I say, that their respiratory surfaces become covered with parasitic productions, capable of intercepting, to their own aggrandisement but to the detriment of the individual, the access of the external air. Mouldiness, mosses, and lichens grow upon the barks of trees, and eventually choke them. The vorticella spread themselves to an indefinite extent upon the surfaces of the respiratory tissues of aquatic beings; and the branchial system is asphyxiated, as well as the lung, although by a different mechanism; we have thus a morbid condition in which, as by a vicious circle of influences, the effect re-acts upon the cause, and in its turn increases its intensity.

The progressive effects remarked in the last agony of the dying man, where the lung is filled with a frothy mucus, which is traversed by the aspired and expired air, with that gurgling sound which we denominate a *râle*,—these effects do not constitute any especial case of asphyxia; for, here, it is not the air which fails the lungs, it is the lung which is unfitted for the air. If the respiratory cells still preserved their vitality, all this froth, which becomes accumulated in the bronchi, would be swept away by the force of the expiration, as are the most compact kinds of expectoration, during the existence of a common cough. In the dying agony, the froth accumulates in the large air-passages, because the gas is not furnished by expiration, in at all a fitting proportion, to produce and distend the mucous bubbles; for the gases in this state arise from the exhaustion of the respiratory cells, and not from their normal and continuous elaboration.

4°. *Asphyxia by Strangulation and by Suffocation.*—*Strangulation* is a case of occlusion, which takes place by the approximation and joining together of the walls of the trachea, a junction which is the result of compression, exercised from without and around the neck, by means of any mechanism resembling that of the slip-knot: the folds of a serpent, the constriction of the hand applied around the throat of the animal, may be as powerful means of strangulation as the running knot of the hangman. But the signs of strangulation will then be different, whether from the marks which each of these modes shall have left upon the surface, or from their deeper-seated effects; these signs will also vary, by reason of the specific and even individual differences of the being. Is it not evident that, in the case of strangulation by suspension, the weight of the body being supported only by the muscles and ligaments which connect the vertebræ one to the other, the inward and outward signs will vary, according to the relative weight of that body; according to its state of repletion or of emptiness, and the relative strength of the muscles and ligaments, upon which this action is, in an especial manner, directed; according to the position and the nature of the means of strangulation; and also according to the moral condition, in which the individual shall at the time be placed, or where he shall have been violently subjected to this dreadful death? The medical man is frequently called before the court of justice, to prove whether a given case of strangulation be the result of suicide, or that of premeditated murder, and to unravel, in the traces left by this work of death, the nature of the means employed to execute it. Unfortunately, in this condition, if instead of having recourse to the data of the most simple good sense, and of that innate reason which is given in certain proportions to every one here below, we fly to those books with which the medical world has been deluged on this subject, we are lost and bewildered at every turning; we find in one page an assertion which is contradicted in the next; and the general rule is confounded in its innumerable masess of exceptions. We must then, in these cases, preserve the full independence of our opinion, and trust only to reason and to experience. Have we not seen, on the occasion of the death of the Prince of Condé, four or five physicians endeavouring to demonstrate, by a thousand reasons each, in their own eyes, more convincing than the others, that the death of the Prince was the effect of a suicide; whilst there was not one of them who must not have known, that suicide by strangulation is impossible by means of a cravat, when the feet of the individual are touching the ground, and which thus furnish, to the innate sense of self-preservation, a point of support, sufficient to save the man from the violence of his own hands?

The immediate signs vary; the *post-mortem* signs vary still more. These cannot be characterized *à priori* and as it were by rote; each individual case presents a fresh subject for study. Take time to consider your opinion. Let your whole ambition be to make yourself intelligible; be assured that that man does not understand the case himself, who expresses his opinion in such a manner that he cannot be understood by others.

The effect of strangulation is instantaneous; there is no means of asphyxia, which so suddenly prevents all access of external air. The air contained in the lungs is deprived of its oxygen; the air expired expands and dilates the lungs, which immediately compress the heart and its dependancies, and thus drive back the blood towards the extremities, at the same time that the compression, exercised upon the carotid arteries and the veins of the neck, forces the blood towards the head. The muscular fibres participate in this violent plethora: they become swollen and proportionately shortened; the muscle is in a state of violent contraction. The hair becomes erect, the eyelids open, the tongue projects from the mouth, the abdomen becomes distended and tumefied by the compression of the viscera, and the genital organ becomes erect, as if to complete this hideous and disgusting scene.

Diseased Formation of the Aortic Arch.—The following were the appearances presented after death by a patient of Dr. Henderson, of Corstorphine, Edinburgh, who died at the age of 30. The heart was very much enlarged, its circumference behind the auricles being $14\frac{1}{2}$ inches. The lowest aortic valve was tucked down, in its free edge, to nearly half its natural size, so that permanent patency existed. The aorta was enlarged, about double its size, and all vestige of the arch was gone. At about half way between its origin and the giving off the carotids, it made a bend to the right, in the form of an obtuse pouch, a mere dilatation in its right walls, a quarter of an inch in depth. This pouch was in the direction of the diseased sigmoid valve, and from that valve being permanently contracted, the force of the current of the blood would be directed against that side of the vessel at that part, and produce the dilatation. The commencement of the descending aorta bulged out into a cone-like form, of a calibre that would hold a moderate sized Jargonelle pear, and very much of that shape, the apex pointing downwards. Its walls were thick, corrugated, and puckered, with two or three bands of itself standing inwards in bold relief. The aorta was rather smaller than natural where it was compressed by the heart. The dilatation of the descending aorta would be produced by the regurgitation of the blood during the diastole of the enormously enlarged heart.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

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We have considered the simply inflammatory affections of the pleura, and now come to one which combines inflammation with structural lesion, a complicated disease, which requires to be considered now, on account of its relations to pleurisy, to which it has some general resemblance, and which it is important to be aware of—I mean pneumothorax, from perforation of the lung. Pneumothorax means an effusion of air into the cavity of the chest, that is to say, into the sac between the pulmonary and the costal pleura. It is sometimes produced by the operation of paracentesis, and sometimes it arises from a spontaneous opening in the chest: these cases are generally accompanied by a state of œdema, and the pus which is formed makes its way, not only to the intercostal spaces, but to the very surface, where this fistulous opening exists. More commonly, however, the perforation affects the pulmonary portion of the pleura, and arises from disease of the lung, extending outwardly towards the pleura. This is the most common cause of pneumothorax. Of the lesions of the lung that produce this perforation, tuberculous ulceration extending to the surface of the pleura, and thus giving passage to the air, is the most common. In phthisis, in a great number of instances, some attempt at reparation takes place, and adhesion of the opposite surfaces occurs; they become agglutinated together, and no ulterior inflammation ensues. But sometimes the pleura is perforated, and the results of this we are now going to describe. The presence of this disease, as a consequence of phthisis, implies a very feeble state of the plastic power, a want of power in the system, to protect the parts against the effects of inflammation. Generally speaking, in a healthily constituted body, protection of the parts takes place, but it is in cases where the plastic power is insufficient, that the accident I allude to, occurs. Perforation arises not simply from the progress of disease in the direction of the pleura, but sometimes from mechanical injury. It may happen, that the upper lobe of a lung, containing a phthisical abscess, gradually approaches very near to the surface of the chest, and sometimes part of the pleura is, more or less, adherent to the chest. Now, under these circumstances, a violent blow on the chest, or the patient falling down, and thus inflicting an injury on the chest, or even a violent fit of coughing, will occasion a laceration of the walls of the abscess, and thus allow the introduction of air into the pleural cavity. I knew a case of pneumothorax arising from a fall, the first symptoms being great difficulty of breathing. The patient had a little cough before, which cough was, I have no doubt, the result of tuberculous disease.

Now the accident of perforation, wherever it occurs, may be accompanied by remarkable symptoms. The sudden entrance of air into the cavity of the chest, from whatever cause, gives rise to severe pain in the side, with irritation, followed by inflammation. There is a sort of stitch in the side, accompanied by dyspnœa. When the air does get into the chest, it incapacitates the lung on the side at which it enters, and the function of the lung is, in a great measure, destroyed. Air accumulating in the pleura, compresses tho lung, and hence dyspnœa is the result. Cough, too, often results from the irritation of the pleura, which is thus produced. There is sometimes noticed, together with the stitch, a catch in the breath, and a remarkable contraction of all the muscles of the affected side. This arises, no doubt, from the irritation of the pleura, caused by the new matter in contact with it. The pulse is, in these cases, at first usually weak, quick and irregular, just as it is after any serious accident. A violent blow of any kind will cause first of all a great prostration, but after a while re-action takes place; the pulse becomes harder, and more powerful, the heat increases on the surface, and the pain and difficulty of breathing continue to a greater or less extent. Such is also what occurs in the disease now under consideration. We find that this disease consists not only of the entry of foreign matter into the pleura, but also of pleurisy, or inflammation superadded, and accompanied, more or less, by liquid effusion. After a while, in the course of a few hours, the dyspnœa generally subsides, or becomes somewhat less oppressive, as well as the acute symptoms of the first entrance of air, and the consequent inflammation, which is induced. It is the first change that is the most severe; and sometimes the shock is so great, that the patient may die in a few hours from the accident. Remember, it occurs as a consequence of previous disease: it does not arise in healthy persons. The difficulty of breathing, thus induced, will still further increase the danger of the patient: air is admitted into the cavity of the pleura, and having been once admitted, the effect of this entrance of air is to cause a collapse of the lung, which, instead of occupying the whole chest, now fills but a small space, whilst the cavity of the chest itself contains air, or air and liquid secreted by the inflamed pleura. This is called hydro-pneumothorax, from there being a combination of air and water in the interior of the chest. Under many circumstances, this condition of the lung continues, the air passes in and out, along with the respiration, and the difficulty of breathing is not so great as it was at first. Sometimes, however, the circumstances are these:—Suppose that perforation, instead of taking place in the upper part of the lung, occurs in the lower part, and there is also liquid: when air is inspired, it becomes drawn into the cavity of the pleura through this orifice, but cannot pass out again, by reason of the resistance of the liquid through which it has traversed, and the air, bubbling in through the opening, rarely allows the liquid to go out. There is another way in which the same thing may occur. Suppose that the perforation takes place on the side of the lung quite close to the pleura, there may be an adhesion, or something resisting at that part, and unless this adhesion be pressed back, though air passes out into the cavity of the pleura at each inspiration, through this orifice, yet at each expiration, the walls of the chest press down the aperture, and effectually close it against the return of the air. Sometimes the result of this is to swell out the side of the chest; the intercostal spaces become bulged out through the accumulation of air, the whole chest is rounded, the diaphragm is pressed down, and the patient may be rapidly suffocated. Thus you see, the disease may proceed rapidly to a fatal termination.

Now, with regard to the physical signs, they are extremely characteristic. Air is now introduced into the cavity of the chest, quite free, and as the lung, on account of its aerial constitution gives elasticity to the walls of the chest, and enables them to vibrate freely, we now find a resonance on percussion over the cavity of the chest, even greater than in the natural state: there will be a sort of tympanitic resonance, something like the sound perceived over the region of the stomach when it is filled with wind. That is the condition of the chest; it is filled with wind to a considerable amount, leaving the walls free to vibrate. This is one of the signs of pneumothorax, and there is an increased degree of resonance on percussion on this part of the chest, corresponding to the amount of air admitted. With this sign, however, we may have a dulness corresponding to that region in which effusion is secreted by the inflamed pleura, to a considerable amount. There will, therefore, be dulness in the lower parts, whilst in the upper part of the chest, there will be an unusual resonance. Further than this, there will be a condition not present in any other disease, in so high a degree; there will be a remarkable contrast in the lower part of the chest as compared with the upper. The natural sounds will be abridged and limited, and you will have the dull sound of the liquid, and the clear sound of the air. Above, you get a fine clear sound, and on striking lower down, you get a dull sound. This is more distinct and satisfactory than in any other disease, more so than in pleurisy. Sometimes there is, in other diseases, a remarkable resonance in other parts, but here there is nothing of the kind; the demarcation is quite clear; together with the altered sound on percussion, owing to the admission of air into the chest, which pushes the lung aside, there will be a diminution of the natural respiratory murmur: the sound of the air passing in and out of the vesicular texture, is no longer heard, or very indistinctly so, because the texture is compressed, and pushed away from the walls of the chest. But are there no novel sounds produced by this condition of things? We have here a combination of circumstances which we have not yet met with, in the acoustic economy of the chest. We have air effused into the cavity immediately underneath the walls of the chest. Now, does this present any peculiar acoustic properties? Does it present phenomena that may become signs of its presence in this cavity? It is accompanied by certain signs, which are very remarkable, and are familiar to any one who has taken the trouble of studying the phenomena of acoustics in common matters, and this will afford an explanation of a physical sign that has puzzled people beyond measure. Wherever there is a cavity filled with air, and possessing walls of a pretty dense character, you have an acoustic cavity capable of producing a sound in itself, which, as you have seen, is like the cavernous or tubular respiration, receiving a peculiar tone from the structure and character of the cavity. By blowing into an india-rubber bottle, you will have an idea of the thing: it is a sound of a peculiar character, and may be called amphoric. The same thing arises in the disease we are considering. The passage of the air in and out of the cavity, if the orifice is large, will be accompanied by the amphoric sound, or some modification of the same, merely from the resonance. When you come to small sized cavities, the sound is too deep, and requires great tact in its discovery; there is no echo as in a large cavity. In the case of a small cavity, there is no time for any echo; and accordingly the sound produced, is merely that which is constituted by the reverberation, the length of which is dependent on the time which the sound takes, in passing from one wall of the cavity to the other; and this often may be prolonged from the repeated number of vibrations. I must refer you to my work, for a more full and philosophical explanation of the whole phenomena of metallic and amphoric resonance. The thing itself is as plain and simple as A B C. I shall merely remark now, that the repetition of vibrations, or of sounds, with a certain degree of rapidity, will constitute a musical note, and in proportion to the rapidity of these sounds, or of these vibrations, will be the pitch of the note. You, perhaps, know the squeaking sound produced by scraping a surface of silk, or pressing on any succession of wires. Now, you will find the pitch of the musical note, in proportion to the rapidity with which the thing producing the sound passes along the surface. This illustrates the fact, that the frequent repetition produces the depth of the note. So it is with regard to the reverberatory echo, produced in the interior of the cavity. The impulse communicated to the interior is repeated, and whether there is a communication with the exterior or not, the repeated inclination, to and fro, modifies the sound, and thus alters the pitch of the note, according to the number of these vibrations in a given time. In all small bodies there is a tinkling sound produced, which you may perceive on placing a small bottle close to the ear. This is a fact of but recent explanation. I was the first to give a physical explanation of these echoes. Sounds which are accompanied by this metallic tinkling, or amphoric resonance, may be produced in various ways. The air passing to and fro into the pleura, will produce a kind of buzzing respiration, something like that caused by blowing into a bottle. Sometimes the air does not pass so freely,—only now and then; and sometimes when it is below the surface, it passes only in bubbles, and each time it rises, it bursts, and a sonorous impulse is given to the cavity, accompanied by a metallic tinkling. The splashing of the liquid will also produce the same thing. Various motions that impinge upon the liquid, will do it, as, for example, cough; sometimes the voice will do it: the voice is transmitted, not only through the orifice, but also through the condensed lung and the bronchi, just as in bronchophony, and all the phenomena of the

voice are transmitted to the walls of the chest; and under these circumstances, you find the metallic tinkling, accompanied by the breath-sound, the bubbling, the cough, the voice, and various other circumstances. Then, there is another thing to be considered; sometimes the sound produced is unusual; there is the metallic tinkling, without the resonance on percussion. Sometimes there is no impulse communicated to the cavity, at least, as far as we can perceive, and no echo reaches the ear. There are conditions, which we cannot specify, to intercept the sound. There is another mode by which the sound may be produced, and that is, by external percussion, which sums up the whole matter. External percussion on the walls of the chest may cause the impulse to be accompanied by a metallic tinkling within. Many of you have seen this on the dead body, at the hospital. In that case, as in others, on applying the stethoscope on some opposite point, where the sound of the stroke can reach the ear across the cavity, you have metallic tinkling induced. The signs may indicate to us the character of the orifice: when the orifice is large and free, the respiration is amphoric, like blowing in and out of a large bottle.

Now, I think you will have already perceived, that the diagnosis of pneumothorax is very easy. There are two conditions with which, however, it may be confounded. I have already mentioned that, with regard to some cases of pleurisy, the pressure on the tubes, or the pressure of the tubes against the walls of the chest, causes a tubular sound to be heard in the upper regions of the chest, while the lower ones are very dull. Now, in the first case I met with of this kind, though a remarkable one, the sound was so clear that I mistook it for a case of pneumothorax, and the patient surprised me by getting well, quite contrary to my expectations. I met with cases afterwards that cleared up my doubts on this subject, and enabled me to distinguish these classes of sounds, one from another. The tubular sound in pleurisy is not accompanied by the metallic tinkling. Then, again, in pneumothorax, you have the occurrence of the paralytic pain, coming on quite suddenly, and the various other phenomena which I have already described. There is also the phenomenon of splashing, produced by the agitation of the body, long ago pointed out by Hippocrates. This arises from the condition in which the chest is found, containing both liquid and air, so that the water is free to splash about in the cavity. The sound of this splashing is often audible to the patient himself. This phenomenon is very much inferior in its value to the other signs, for the reason that it cannot be used when the patient is weak. Then, again, in pleurisy, there is a much greater amount of general dullness, than there is in this affection. The other case which may be confounded with pneumothorax, is that of a large cavity in the lung, as, tuberculous vomicæ, or abscess of the lung. This we shall consider under the head of phthisis. It often produces the same physical signs as pneumothorax, and for this reason, that there is a large cavity in the interior, which communicates a tubular character to the sound of the cough or the breath, but there is not the dullness on percussion in the lower parts of the chest, which we have in pneumothorax.

The prognosis under circumstances of this kind, in pneumothorax or hydro-pneumothorax, arising from perforation of the lung, must be unfavourable; not that the disease itself, or the accident that is produced, is necessarily fatal, or very injurious; but it is usually dependent on the presence of extensive disease in the lung, and occurs as a consequence of phthisis. But it is a curious fact, that when the tuberculous disease is limited, the perforation may go on for years. I have seen a case that existed for fourteen months; and Dr. Stokes gives an instance, where it continued for several years, and the patient was in the habit of waking by the sound of the splashing of the liquid within his chest. Some countenance has been given to the notion, that in phthisis, if the patient is not very weak, it is better that this accident should occur, especially if attended with a fistulous opening; and it sometimes does retard the progress of the disease in the lung. In the first place, it causes a collapse of the lung, and renders this organ very inactive. There was a very preposterous idea, that phthisis was to be cured by letting air into the cavity of the chest, but this is not true. It certainly is the fact, however, that in this condition of the lung, the phthisical disease will not proceed so rapidly; and accordingly you find, that the lung, on the affected side, is rarely so advanced in tuberculous disease as the other lung. It must be considered as a cause of retardation of the disease, for here there is a sort of physical counter-irritation on the serous surface, which acts as a blister, and this, in some measure, relieves the disease of the lung.

The treatment of this affection is, at the first period of the perforation, to allay the sudden pain and spasm by sedatives and narcotics, and even stimulants where there is much depression, or sometimes by antiphlogistic treatment; but we must remember, that we are treating a disease in which we cannot have extensive depletion. You may apply blisters, or mustard poultices, or a few leeches when the pain is severe, and give opium, which may be combined with mercury. After the air has accumulated, or where there is a tendency to accumulate, we may avert the impending suffocation, and let the air out, by puncturing the chest; and, in some cases, life has been saved by an operation of this kind. When, therefore, the symptoms of the accumulation of air are evident, when great depression takes place, and the patient is suffering from increasing dyspnœa, there will be a clear indication to puncture the chest, and let the air out.

There is one affection I need not detain you with, and that is a congregation of cartilaginous matter in the pleura. Another affection, which should be just noticed, because it derives some importance from its liability to be confounded with some of the diseases I have been mentioning, is pleurodynia, or pain in the pleura, but which is unaccompanied by inflammation. It is important to be aware of the existence of this, and to avoid confounding it with pleurisy. Now, pleurodynia may be rheumatic, and caused by adhesion between the intercostal muscles and the fasciæ, with which they abound; sometimes, on the other hand, it is nervous, and is often connected with neuralgic pains in the back, and increased sensibility of the spinal cord. In either of these cases, there is a much greater amount of external tenderness, than there is in common pleurisy. In the former case, the skin is acutely sensitive and tender, and the intercostal muscles, and intercostal spaces, are exceedingly tender. It is to be distinguished from pleurisy, by the absence of the physical signs of pleurisy; there is no liquid effusion, nor dullness on percussion. The treatment of pleurodynia, is by colchicum and calomel, and by stimulant embrocations to the part; counter-irritation, and leeches to the spine, or belladonna ointment, applying it also over the surface of the chest; strong ammoniacal embrocations, sinapisms, or dry applications of heat, often relieve the pains in the chest. In the case of sternalgia, or pain lower down, there is more usually an affection of the stomach, or some other of the abdominal viscera.

Cancer.—M. Tanchon, in a memoir to the Academy of Sciences, Paris, announces the following facts:—From 1830 to 1840 (11 years), there were, according to the registers of the department of the Seine, 382,851 deaths, of these 9,118 are attributed to cancer, 2,861 males, and 4,796 females. With reference to Paris, at least, M. Tanchon considers that cancers are increasing, that women are the greater sufferers, that in the present state of science, and from his own written observations, as well as from those of other authors, it is yet far from clear that cancer is not curable, that its treatment, like syphilis, must still, however, be empirical, and that as we have succeeded in mitigating the severity of cancer, turning it from acute to chronic, and lessening the glandular enlargements in which it burrows, much more may yet be expected.

DR. CLAY'S REPLY TO DR. GRANVILLE ON OVARIAN EXTIRPATION.

In the *Medical Gazette* for 13th January, 1843, is a letter from a Dr. Granville, claiming priority over myself and Mr. Walne, in respect to the operation for removing diseased ovaria. The letter, by which the claim is attempted to be established, is in itself a great curiosity. Now it happens that neither myself nor Mr. Walne, ever claimed, originality for ovarian extirpation, *but for extirpation by a much larger incision than heretofore, (generally from sternum to pubis,)* on which Dr. Granville has entirely failed to make out his case of claim. If Dr. Granville had read my cases, he would have discovered an immense contrast between the practice pursued by American, Continental, and Scotch operators, and that practised by Dr. Granville and those *who preceded him*, the merit of which latter operation is attributable to Mr. Jeffreason and others more immediately following him. Dr. Granville's operations were of the minor class of incisions, a mode that I have proved generally inadequate to accomplish the object in view: I have also proved that my three first cases *were really the first operations* for extirpation *by the large incision in England.* The first operation of Dr. Granville proves my claim distinctly; first, that the incision *he* made was insufficient; and second, if the opening had been large enough, the band-like adhesions would have formed no obstacle to the entire removal of the tumour, for I have separated hundreds of such adhesions without ill consequences. Both Dr. Granville's were decided failures. In the first, he commenced but did not complete the operation, in the second the patient died on the third day. I have no hesitation in saying his first case was a legitimate one for entire extirpation; the particulars of the second are too few to judge of the real cause of death. Had the tumour in the first case been extirpated, the patient's chance of recovery would have been equal to being left in the state she was. In ovarian extirpation, my mind is perfectly settled on one point, viz., that band-like visceral adhesions are no bar to the operation, nor obstacle to recovery from it, *provided the incision is large enough to give room for entire separation, without dragging or displacing the connecting viscera.* It is the broad patches of adhesion to the parietes abdominis that are to be feared; even these, I have separated to the number of six in one case, (and one of the six as large as a crown piece, so firmly organized with the peritoneum that it was impossible to discover the distinction), and when the tumour was removed, a large portion, equal to three square inches of the peritoneal surface, was found attached, *and yet this case entirely recovered.*

Dr. Granville's cases are so meagre in relation that it would be impossible to obtain from them the requisite information for criticism; and, I am sorry that *the only* published account of one of them has to be sought for in an unprofessional journal, where such statements can have but one object in appearing

Dr. Granville states, "I certainly take blame to myself for having omitted to publish, at the time, a full *professional statement* of the two cases in question, considering how important a step in obstetrical medicine is the operation alluded to." How very considerate! Do we not here perceive some trifling misgivings for the unprofessional style? The case was reported in the *Literary Gazette* of 1827. How much more creditable would the entire omission of publication have been to the following from the *Literary Gazette.* "*Extraordinary Surgical Operation.*—On the 21st inst. a tumour, weighing upwards of eight pounds, and in magnitude larger than the human head, was extracted entire from the abdomen of a woman between thirty and forty years of age, by Dr. A. B Granville. Notwithstanding the extent of the incision, nine inches in length, no bowel was permitted to obtrude; and the quantity of blood lost did not exceed two ounces. The results likely to follow from determining the facility of such an operation are very important, &c. &c."

No one can read this paragraph without concluding that the case was eminently successful, both in reference to the operation and its result,

whilst the contrary was the fact, *the patient died on the third day.* Should not the result have accompanied the public announcement of the case? Most certainly; and that not being the case, was calculated to mislead the unsuspecting public.

I do not blame Dr. Granville so much for the omission of a professional statement as I do for the unprofessional announcement, leaving out the most important point—*its result.*

But then how does the Doctor exonerate himself? He says—"But many hundred other engagements supervening in an ever busy and laborious career, I was prevented from carrying into effect the intention of giving to the medical world a practical account of so important an operation, performed upwards of fifteen years before either Dr. Clay or Mr. Walne *thought* of operating."

What a pity his laborious career did not prevent his extraordinary actions from going to the non-medical world in so questionable a shape! Passing over the Granviloquent style of self eulogy in the first part of this last quotation, I am desirous of knowing how the Doctor became possessed of means for ascertaining my thoughts or those of Mr. Walne so many long years ago. Dr. Granville might be the only person of twenty year's experience in the world. I cannot answer for the age of Mr. Walne, only knowing him by repute, but I can vouch for myself a length of years and experience equal to Dr. Granville; and as far as thoughts are concerned, I can vouch for having thought of the operation as early as in 1823, and having asserted at the time, that if ever an opportunity presented itself to me in practice, I would adopt the large incision of Mr. Lizars, whose operations took place during my stay in Edinburgh; and it would have been impossible not to have had my thoughts directed at that time to operations of such magnitude and importance, and these happened to precede (some years) the attempts by Dr. Granville. I maintain that Dr. Granville is but the successor of a mode proposed by Mr. Jeffreason, namely, the minor operation, whilst my claim to the major incision for England (at least) remains undisputed, and I intend shortly to communicate to the medical world, through a professional journal, the result of other cases, when the comparative value of the two operations will be better understood than it hitherto has been.

Charles Clay.

Piccadilly, Manchester, Aug. 9, 1843.

BLEEDING IN ACUTE INFLAMMATION.

To the Editor of the 'Medical Times.'

Sir,—If you consider this communication worth inserting in your excellent periodical, I shall feel obliged by your giving it a place there; my object is to shew to the profession, beyond refutation, that there is no stage of life, from the earliest period of infancy, to the most advanced age, in which depletion, by abstraction of blood, is not absolutely indispensible; where acute inflammation of any vital viscus or important parts connected therewith, as its membranes, &c. &c. &c., exists, that it should be resorted to without delay, as much depends upon the *in tempore* adoption of this remedy, which I can in truth assert, is the *omnium primum*; and that when resorted to, it should be carried to a far greater extent than it hitherto usually has been; and, moreover, that the reason, which is so often erroneously and most mischievously urged as a motive for waiving so essential a remedial and curative agent, is the strongest argument in favor of it, and proof of its necessity, viz., the delicacy of the system and constitution of the sufferer; for it is especially on these accounts, that the patient is the less able to bear the destructive ravages of inflammatory action, and its invariable consequences, organic diseases; and the earlier it is adopted, the less amount will relieve, and the strength not have been exhausted.

In a full practice of upwards of 20 years, upon the most serious reflection, I have never, upon any occasion, had to regret, having taken away too much blood; but, on the contrary, many times, a *post mortem* reference has convinced me, that I have stopped short of the quantity necessary to effect the purpose, for the attainment of which I had resorted to it, most probably under the influence of the prejudice of inducing a state of debility, which it is surely better to encounter in its abstract form, as the consequence and result of remedy and necessary treatment, than as the effect of organic disease, arising from the neglect of such proper remedy; and I dare make this bold assertion, that I never knew a patient die from debility, abstractedly, that is, unconnected with organic disease, except in a few cases of active hæmorrhage, or when the oil in the lamp of life has been naturally exhausted.

The imperative necessity of abstracting blood generally, and thereby diminishing the momentum of the circulation, is prominently evident, from the general inflammatory characteristics, of full pulse, occasionally hard and wiry—in pleuritic and enteritic diseases; hot skin, dry tongue; pain in some particular locality, increased upon the exertion of the organ affected, during its natural function, or upon pressure, when that diagnosis is available; and the quantity should be limited *only* by the extent of mischief to be overcome, and not remitted until the object for which it was commenced is fully attained: the only auxiliaries I usually find necessary are purgatives, and modified doses of that invaluable medicine, the tartarized antimony, avoiding the counter irritants (too often proving general irritants,) commonly adopted. Before this system of practice, I usually find diseases of the most alarming aspect, give way.

By actively combating inflammatory action *in limine*, I gain my point, before the nervous and muscular systems are reduced by continued fever and irritation, and convalescence is thus rapidly restored, without that deluge of medicine, with which the public are so enormously inundated. I will not presume to trench further upon your valuable space, but beg honestly to state, I could furnish you with a hundred more cases, like those appended to this paper; and can only say to my professional brethren, *ex his disce omnes.*

I have the honor to remain,
Sir, your obedient servant,
John Langley.

10, Howland Street, Fitzroy Square, Aug. 9, 1843.

Case 1st.*—Child of Mr. B., coffee-house keeper, Tottenham Court Road, age 18 months, full habit, robust form, disease—congestion of the vessels of brain and membranes, probably cerebritis, coma; proximate cause, difficult dentition; treatment, freely incising gums, hirudines xii. raso capiti, no abatement of symptoms after four hours bleeding; coma still continues, with an accession of stertorous breathing. Cupping ad deliquium,† post aures, faintness not produced with 11 ounces; child cried, consciousness returned, perfect convalescence in one week.

Case 2d.—A gentleman residing at 4, Knight's Place, Vauxhall, age 55, habit full, rigid fibre, subject to heavy asthmatic respiration, with chronic bronchitis; to which supervened acute pneumonia, from an aquatic excursion in foul weather; bleeding and cupping, total amount in 36 hours, 98 ounces; very little relief until the last cupping of 20 ounces; perfect convalescence in 12 days, with a very material amendment of former diseases, amounting almost to obliteration.

Case 3d.—T. R. M., Esq., Tottenham Street, full habit, corpulent, age 70, attacked with pneumonia from exposure to wet and cold, long subject to asthma and chronic bronchitis; had lost 40 ounces of blood, three weeks previously to this attack, to relieve what I conceive to be pulmonary congestion. The legs and feet much swollen; which symptom deterred an eminent physician from allowing me to bleed him 12 months since; upon the present occasion, (April last), I found him suffering all the distressing symptoms of pneumonia, superadded to, and aggravated by, the chronic affection. I took from him 53 ounces of blood, *he sitting erect the whole time; the last* 20 *ounces flowing* without the assistance of the usual ligature; no faintness occurred; the pneumonic symptoms relieved, had good tranquil sleep; at the end of a fortnight stated himself to be quite well, much stronger than heretofore; the swelling of the legs and feet, as I expected, from past experience, quite gone; his breathing naturally free, lost the bronchitic wheeze, and is at this moment, I am happy to say, in better health, than he has been for years past. This case reminds me of my feeling upon that of his late Majesty William the Fourth; there seems a striking analogy between the two. I then thought, the recent acute inflammation was overlooked, and too much respect paid to the chronic symptoms—which I fear is too often the case.

Case 4th.—A young lady, 20 years of age, attacked in the plenitude of health with peritonitis, of puerperal character, having under circumstances which ought to have insured more prudence, sat for some time upon a cold damp grave stone, in a bleak situation; attack very severe; lost in 3 bleedings and one cupping, in 30 hours, 68 ounces of blood; perfect relief and speedy convalescence.

Case 5th.—A young lady, aged 23, residing in Fitzroy Street, attacked nearly at the same time, and, extraordinarily, under precisely the same circumstances; 76 ounces of blood in 4 bleedings; perfect relief and early convalescence.

Case 6th.—A girl, 21 years of age, full habit, florid complexion and robust; servant to a lady residing at 4, Edward Street, Portman Square; had the misfortune to thrust obliquely, a large dirty butcher's skewer into the fleshy part of the calf of the leg, to a depth of more than two inches. I saw her shortly after the accident; she was suffering very severe pain; considerable swelling had taken place around the wound, with extensive ecchymosis; I was fearful lest the peroneal artery had suffered. I determined to bleed her,

* This reminds me of the case of the child of a gentleman, at Vauxhall, to whom I was called, when 6 leeches had been applied at 3 different periods, with much anxiety, fearing the mischief they might do: I advised immediate cupping, when a physician, in his Octogenarian zenith, said, very gravely—"Sir, we must act commensurately with the powers of the system"—to which I replied, truly, but what power of system can exist under this state of things. He reluctantly consented to the application of 4 more leeches; the child died the next day; I removed the cranium, and brought him *testem invitum* to see the strawberry brain of his lost patient.

† This patient, as all the others, was cupped by Mr. Betts, who with his son, (though they need it not), I beg most earnestly to recommend to the faculty as cuppers, for promptness in attendance, dexterity, delicacy, and ease in performing the operation; and what is paramount to all, fidelity as to the quantity taken, all being done by exact measure.

precautionarily, ad deliquium; I placed her in a chair, made a free orifice; and not until the 40th ounce was flowing, was there any symptom of fainting. I applied a compress of lint, wetted with cold water, over the wound; put her to bed; gave 5 grains of calomel, with 10 of ext. col. comp.; in 6 hours hours a black draught; not the slightest evidence of painful inflammation followed; the effused blood was all absorbed, and the swelling quite subsided in three days; and in 10 days more, she was quite well. Does not this, though it may be considered a trivial case, shew the advantago of anticipatory bleeding, which I marvel was not resorted to upon two recent violent injuries.

PERISCOPE OF THE WEEK.

Lancet; L'Experience; Journal de Medecine: Medical Gazette; Provincial Medical Transactions; British and Foreign Medical Review; Pharmaceutical Journal; Archives de la Medicine Belges: London and Edinburgh Medical Journal.

The Ter-chloride of Carbon in Cancerous Diseases.—Mr. Tuson, surgeon to the Middlesex Hospital, has employed the ter-chloride of carbon both internally and externally, in the treatment of cancerous diseases, and he says with beneficial effects. The first case in which it was employed was one of cancer in the left breast: one drachm was mixed in a pint of water, linen rags were moistened with the lotion, and applied to the tumour. The effect was immediate relief from the pain, and the fœtor from the discharge was completely destroyed. After it had been used some time, there arose an areolar inflammatory action around the tumour, of an erysipelatous character, of about two inches in extent. The skin around was red, of a deeper color towards the disease; as the redness increased, large veins became visible, passing in a radiated and tortuous direction from the disease to the surrounding healthy parts. These changes disappeared as the cancer sloughed away. The ter-chloride of carbon was prescribed internally, in the dose of one, two, and three drops, three times a day in water; its effect was sedative, producing sleep for 24 hours, an effect which, Mr. Tuson observes, is not caused save in cancer, and some other diseases. He advises it in the treatment of gangrena senilis, sloughing ulcers, carcinoma or schirrus uteri, and neuralgic affections. It allays nervous irritability, removes anxiety of mind, and invigorates and raises the spirits. In the cases of gangrene and sloughing ulcers, it allays pain by its sedative action, and removes the attendant intolerable fœtor. The ter-chloride of carbon is a clear transparent fluid, smelling strongly of chlorine, as its name would lead one to expect, It consists of three parts of chlorine, and one of carbon. The dose is from one to four drops, two or three times a day, in water; one to two drachms in a pint of water, as an injection or lotion.

Quinine in Rheumatism.—Dr. Searle, of Bath, has reported three cases of rheumatism, cured by moderate and repeated doses of quinine. In one instance he was obliged to employ venesection, and substitute, for a while, calomel and antimony for the quina. To judge from his prescriptions, he does not appear to be any friend to the heroic doses of our continental brethren.

Anodyne Power of the Cynara.—Dr. Badeley, of Chelmsford, has found the cynara a medicine of considerable anodyne efficacy in cases of neuralgic and rheumatic affections. He generally prescribes a combination of a drachm of the tincture with five grains of the extract, three times a day, either with colchicum, Battley's solution, morphia, the mistura guaiaci, or mistura camphoræ. It possesses the advantage of not having any deleterious or prejudicial effects on the system, and the dose may be increased in its proportions and duration, as the case may require. It is necessary that the preparations be made quite fresh from the leaves, its efficacy apparently depending on its freshness. Several cases of gout have yielded so rapidly to its exhibition as to induce a belief in its specific power in the minds of those who have suffered from it.

Compression of the Head in Hydrencephalus.—M. Trousseau narrates a case of hydrencephalus, in which compression was practised, but the effusion continuing, coma supervened, and a few days afterwards, a sudden flow of limpid fluid took place from the nostrils, the head as suddenly diminished in size, and the child died instantly.

Sensibility of the Glottis after Tracheotomy.—At the last meeting of the Royal Medical and Chirurgical Society, when the case of Mr. Brunel was brought forward, the question was mooted as to whether the sensibility of the glottis to the presence of a foreign body was diminished by an opening made in the trachea. In order to determine this question satisfactorily, Mr. Erichsen performed several experiments on dogs, from which he concludes, that the existence of an opening in the trachea, sufficiently free to allow respiration to be carried on through it, or, indeed, complete division of the tube, does not materially, if at all, diminish the sensibility and contractility of the glottis, and he considers that when a foreign body, accidentally introduced into the air passages, escapes through the glottis without exciting spasmodic contraction of its muscles, or reflex movements in those of respiration generally, after an opening has been made in the trachea, it probably does so in the same accidental way that it entered, the sensitive parts through which it passes being, as it were, taken by surprise, whilst the attention of the patient is directed to the artificial opening, or to the circumstances in which he is placed. There is, however, this most important difference between the presence of a foreign body in the larynx, or at the glottis, before and after tracheotomy has been performed, that although the sensation of local irritation, and the reflex movements consequent on them, may, in both instances, be the same; yet danger from asphyxia can necessarily only occur in those cases in which the glottis is the sole aperture through which respiration can be carried on. Mr. Erichsen further advises, that in cases where a coin, to other heavy substance, has passed into the trachea, after the tube has been opened, and before the patient is placed in the prone position, to introduce some instrument to arrest the coin when it is dislodged, and prevent its falling against the glottis. With this view, Mr. Erichsen has had an instrument made, consisting of a pair of cross-action forceps, the blades of which terminate in branches $2\frac{1}{2}$ inches in length, and slightly bowed at the extremities: within the bowed part is inserted a piece of delicate, but strong net. The forceps open to the extent of three-quarters of an inch, which will be sufficient to obstruct all passage through the windpipe in the ordinary situation for tracheotomy. They should be introduced edgways in a direction corresponding to the longitudinal diameter of the tracheal incision; they may, then, the patient having been turned on his face, be opened transversely, and the foreign body will, if dislodged, necessarily either fall out of the artificial opening, the sides of which will then be kept widely separated by them, or against the net of the instrument, whence it may be removed either with a common pair of operating forceps, or else by using the tracheal forceps as a scoop. At all events, the great object with which the instrument is used, that of preventing the foreign body from falling into the larynx, or against the glottis, and thus exciting irritation and distress, would be accomplished. The experiments on the sensibility of the glottis, were performed six years ago by Magendie, with the same result.

The Long Issue on the Calvarium.—Dr. Wallis, physician to the Infirmary at Bristol, has published a memoir in the Provincial Medical Transactions, entitled, "Some Cases shewing the advantage of powerful counter-irritation, especially the long issue on the calvarium." He was first led to try it on the recommendation of Mr. Smith, senior surgeon to the Infirmary, and has since employed it extensively in a great variety of cases of organic disease of the brain, both acute and chronic, in paralysis, impending effusions, convulsions, erysipelas of the head and membranes of the brain, in the very advanced stages of fever, in one case of hysteria, with great advantage, and in a case or two of mania. He considers it to be the most powerful and efficacious of all our remedies of the class of counter-irritants, while its effects are more permanent, and its disadvantages fewer. It is made as follows:—the head is entirely shaved, and the patient placed near the right side of the bed, with the head raised, and the neck enveloped in a towel to receive the blood. An assistant keeps the head steady, and puts the calvarium on the stretch, in which the operator may also assist. The incision is commenced as far back as the lambdoidal suture, and carried on directly along the sagittal, as far as the hair grows. The scalp must be divided entirely through at once, so that the edges of the wound will separate so far as to permit the introduction of a hard dossil of lint, soaked in turpentine, by which the supervention of suppuration is hastened, as well as the hæmorrhage arrested. The bleeding will seldom amount to more than 6 or 8 ounces, and should it be desirable to prevent such a loss of blood, when the incision has been made, the sides of the wound are to be closed and compressed until the dossil of lint, properly prepared, is ready to be applied, after which, the wound may be strapped up: a little flour and dry lint may be used, if requisite. The dossil of lint must not be made so thick as to rise much above the edges of the wound, or else the adhesive straps will not be secure, by being elevated, and thereby prevented from adhering near the edges of the incision. Should the incision be imperfectly made, that is to say, not entirely through the scalp, the arteries might be only partially divided; in which case, they will continue to bleed, notwithstanding the pressure that may be made; they must be completely divided to allow them to retract, and cease to bleed.

Test for Arsenic.—The one hundred and forty-fourth part of a grain of arsenious acid was mixed with two fluid drachms of milk. The mixture was boiled with a few drops of hydrochloric acid, and a slip of copper introduced. In less than a minute the metal was coated with a grey film of metallic arsenic. Several pieces were thus coated; they were washed in water, dried in the heated current of air over a spirit lamp flame, and introduced into a small reduction tube. On applying a gentle heat to the copper, octohedral crystals were obtained, visible to the eye in the light of the sun, but plainly distinguishable with a lens of low power. The crystals dissolved in

water gave the usual reactions with the ammoniaco-nitrate of silver and sulphuretted hydrogen gas. Similar results attended experiments with an equal quantity of arsenic in porter, gruel, broth, brandy, port wine, cake, &c. The contents of the stomachs of persons poisoned in the years 1834, 1835, 1838, and 1840, respectively, also demonstrated the value of the test. In the conversion of the metal to arsenious acid, it will at once suggest itself, that if octohedral crystals should not be obtained by heating one portion of copper, several slips should be introduced, together or separately. In all these cases, arsenic could have been discovered by the application of Marsh's test, or sulphuretted hydrogen gas; but the process would have occupied a much longer time, and with regard to Marsh's test, the metallic arsenic could not have been so speedily converted to arsenious acid, in a form convenient for the identification of its properties. If the arsenic have been thrown down from the organic liquid in the form of impure sesqui-sulphuret, it may be dried and deflagrated with nitre, or decomposed by nitro-muriatic acid, whereby arseniate of potash, or arsenic acid, will result, and the organic matter will be decomposed. In the case of deflagration by nitre, the surplus nitric acid should be expelled by sulphuric acid, and the arseniate dissolved out of the residue, or if nitro-muriatic acid be used, the liquid may be evaporated to dryness. On boiling either of these products with copper and hydrochloric acid, the metallic arsenic will be readily procured. The objections to this test are, that antimony and bismuth are equally deposited on copper, when boiled with hydrochloric acid; they are the only two metals which are likely to be mistaken for arsenic. M. Reinsch, who discovered this test, says, that the bismuth is always deposited in a crystalline form, and the antimony has a violet tint in diluted, and a white or grey color in concentrated solutions. From the physical characters alone, it would be hazardous to pronounce on the presence of arsenic in a suspected unknown liquid, but the arsenic can be easily obtained from the copper by heating the metal in a reduction tube, under the form of crystalline octohedra, or of a white sublimate, easily dissolved by water, in sufficient quantity for the application of the silver and sulphuretted hydrogen tests The obtaining of octohedral crystals is highly characteristic of arsenious acid.

Abscess in the Laryngo-pharyngeal Septum.—Charles Louis Roels, 21 years of age, was admitted into the military hospital at Namur, in the evening of the 21st January, 1842, complaining of sore-throat, to such an extent that he could not swallow either solids or liquids, the food returning by the nose, caused, as he believed, by a hard body, perhaps a bone, having passed into the throat, which he could not dislodge. There was neither redness nor swelling of the part, the pulse quiet, tongue clean, skin moist, face rather tumefied, voice hoarse, respiration easy, but hissing. The next day the movements of the tongue were difficult and painful, especially those of deglutition, the thyroid cartilage was wider and less prominent than natural, and pressure on the front or sides of the neck, caused difficulty of breathing. The patient had had a disturbed night, and complained of rigors. The day after, the difficulty of breathing and deglutition had increased, and they were attended with much pain. The patient could scarcely separate his jaws. There still was not any swelling of the velum palati, tonsils or uvula; pressure on the larynx was more painful, rigors continuous, pulse 80, quick, thirst and general malaise. The plan of treatment by the *medecine expectante*, which had hitherto been adopted, was still persisted in, and the next day there was orthopnæa, with a contracted quick pulse, injected face, eyes red and projecting, deglutition absolutely impossible, and intense thirst. To check this state, *eight leeches were ordered to be applied to the larynx*, and a mustard foot bath was also directed. The next day the physician seems to have had an indistinct idea that there was some mischief going on, and suspected inflammation of the œsophagus. He accordingly introduced his forefinger with difficulty into the mouth, and carried it far back, but could not discover any swelling. Each time, however, that he pressed on the base of the tongue, he caused severe pain, distress, and efforts to vomit, during which an abscess burst, and about three ounces of healthy pus were evacuated. Immediate relief was obtained, and, although slight pains were felt for a few days at the back of the larynx, he soon recovered, and was dismissed on the 30th. This is a very interesting case, and carefully detailed, but treated without the slightest vigor or discrimination. For the first few days, notwithstanding the well-marked evidence of violent local inflammation, and the severity of the general symptoms, the chief treatment consisted of emollient poultices, alum gargles, mustard pediluvia, vapour baths, and lavements. The physician in attendance seemed desirous of testing the powers of Dame Nature to the utmost, and it is to be credited had his patient been 61 instead of 21, this system of non-interference would have cost him his life. *They do (not) manage these things better in France.*

Case of Dissecting Aneurism of the Thoracic and Abdominal Aorta.—Margaret Robertson, 60 years of age, was admitted into the Royal Infirmary, under the care of Dr. Henderson, with symptoms of pulmonary disease and general dropsy and anasarca. She was admitted on the 13th of August last year, and died in the succeeding October. Besides the diseased condition of the lungs, both ventricles of the heart were in a state of excentric hypertrophy, the left without increased thickness of the walls, the right with a moderate increase of thickness. The valves were sound, with the exception of those of the aorta, which were a little thickened, and indurated at their edges of attachment. The aorta was of moderate size, with a few inconsiderable yellowish elevations on its inner surface. In the fore-part of the vessel, a little beyond the origin of the left subclavian, there commences a slit in the coats, extending an inch and one-tenth in the direction of the axis of the vessel. From this opening, throughout its whole extent, the aorta consists of two canals, the one consisting of the old channel, the other of one exterior to it, on its left side chiefly, but partly also on its front, and communicating with the old channel, both by the slit already noticed, and by another, a quarter of an inch long, running in the same direction, and commencing near the termination of the larger. The new channel extends half an inch beyond the origin of the left common iliac artery, and opens into it by an elliptical transverse aperture, occupying about one-half of the calibre of that vessel. It ends at the commencement of the right common iliac by a blind extremity. The slits in the aorta have smooth and polished margins, and form narrow ellipses, each bounded at either extremity by an acute curve, firm, sharp, and polished. The partition between the new and old channels in the left iliac terminates in a sharp semilunar edge, equally firm and smooth as those of the slits in the aorta. Almost exactly one longitudinal half of the aorta, from the superior fissure downwards, has been dissected so as to form the new channel, which is of uniform size throughout, except just above the origin of the renal arteries, where there is a slight dilatation, containing a little coagulated and discoloured fibrine. Its inner surface is of a dull yellow colour, and is much roughened by opaque clay-coloured prominences, and atheromatous patches. Near the point where the outer wall of the new channel meets the septum between the two, are here and there short cylindrical dense yellow cords, passing from the latter to the former, manifestly the obliterated intercostal and lumbar arteries. The walls of both channels are firm and dense, and the following arrangement of the tunics can be easily traced on the cut surface of a transverse section.—1st. There is an external coat, common to the two channels.—2nd. A thicker layer, having transverse fibres, and constituting the middle coat of the artery, split into two at the sides of the new channel, the one layer forming the chief part of the thickness of the septum, the other, and thinner, forming a middle coat to the outer wall of the new channel.—3rd Each channel has a lining membrane of its own, that of the new one being the thicker and firmer of the two. Each channel, therefore, is invested by three tunics, the septum being of course common to both; and so perfectly does the new canal resemble an artery, that the aorta from the left subclavian to the iliacs may be regarded as having been converted into a double artery.

Hydrocele treated by Acupuncture, a Needle Remaining in the Tunica Vaginalis Eleven Months.—Mr. Fergusson, of King's College, was consulted in February last by a gentleman fifty years of age, who had long laboured under a hydrocele, which had been recently converted into a hematoid. On examination, he found a hard and sharp projection at the lowest and back part of the testicle, which was supposed to be an enlargement of the epididymis. The fluid having collected sufficiently by the month of April, it was evacuated by the trocar and canula, and the testicle, submitted to careful examination, found to be healthy. The sharp point previously noticed was very distinct. Mr. Fergusson soon after laid open the scrotum, and passed in his finger, which came in contact with a hard substance, which proved to be an ordinary Whitechapel sewing needle, two inches in length, previously used by the patient in acupuncture. The point seemed lodged in the lower end of the testicle, and the other extremity was held fast in the thickened tunica vaginalis. The subsequent treatment presented nothing worthy of notice.

Presentation of the Belly. — Dr. Holmes, of Montreal, Canada, was called in by a midwife to a case, where she could not discover the nature of the presentation. On introducing the finger, it was met by a soft resisting body, too soft for the nates, and which exhibited no sulcus nor parts of generation. It had much the feeling of an hydrencephalic bag, and, on passing the finger towards the anterior parts of the pelvis, loose bony points were felt, not unlike the angles met with sometimes at the fontanelles, when ossification is incomplete. Dr. Holmes was, however, undecided—until, after carrying the finger towards the left side, he came upon the abdominal insertion of the umbilical cord, which was pulseless. Enlightened as to the nature of the case, he could follow with the finger the whole contour of the false ribs on both sides; and as the presenting part had been forced down considerably into the pelvis, it was evident that the body must be doubled

on itself. Version was practised, but not without considerable difficulty, and the mother unfortunately died thirty-six hours after delivery, having exhibited symptoms of irritation, &c., in the course of the succeeding day, for which she was bled, unadvisedly, as we think. Anodynes and diffusible stimuli might have been of more service. Abdominal presentations are very rare, only three having occurred out of 12,605 cases: indeed, by some writers, the possibility of such a presentation is altogether denied.

THE MEDICAL TIMES.

Saturday, August 19, 1843.

Strenua nos exercet inertia.—Hor.

We dare say there were some of our readers—the *very* experienced and sagacious, more than others—who smiled at the enthusiasm characterizing our last week's remarks on the contingency of a New Charter for the College of Surgeons. Well versed, doubtless, in the past history of politics, they thought, in the absolute repose of their off-handed wisdom, that we were but betaking ourselves to the stale artifice of the journalists, and exerting our humble powers in re-enacting, for the good of our exchequer, the favourite farce of "Much ado about Nothing." To them, our anticipations were the fabrics of a lively fancy—our alarms, either assumptions or pieces of folly—our prophecies, preposterous—our zeal, either a mask or purely ridiculous. Into what a *bouleversement*, then, must these gentlemen's self-esteem be thrown, when it is announced to them—as we authoritatively now announce it—that the contingency, so extraordinary, so remote, so improbable, aye, impossible, *has* happened—that the New Charter is now really and truly complete—that the Government announcement of its integral concession has been officially and definitively made—and that, at the most, it now but awaits,—if, while we write, it has not ceased to await—the bare formality of the royal sign-manual!

While the certainty of this now undoubted fact proves *us* as right, as our disbelievers wrong, we can sincerely declare that it comes upon us not the less unwelcomely. Like Cassandra, amid the misfortunes of Troy, we can mourn alike our prophecy's incredulous neglect, and too speedy realization. Condemned to witness both our profession's unworthiness of its mission, (for how else explain its ruinous supineness?) and its doom to a fate which, while punishing it to its deserts, must make it still more unworthy, if we can derive *any* satisfaction, it is not from the prospect without, but within. Whatever the evils abroad, we have the sense of performed duty at home. We share the common misfortune, but—let us speak the truth—not the common fault of deserving it.

The New Charter derives its great importance far more from its remoter effects, than from the changes it immediately introduces. Its innovations on the old charter are comparatively insignificant. If we are rightly informed, the examiners are now to be chosen and maintained for some other merit besides seniority or dotage. Councillors are to be elected on a system which will give a man another chance after a former rejection; the self-electing system, though preserved, is extended to a larger body of "shareholders," and two hundred or more town and country surgeons, who are, of course, already fixed, nominated, and elected, are under the name of "Fellows," to be the depositories of the elective trust. Now, though what we would deplore here is more what has not been done, than what has, the establishment of this *new select* body is, to our minds, extremely objectionable—if not also preposterously impolitic in its originators. If the principle of self-election, which is now defunct in every other corporation in the empire, is to be still maintained in the unique body of Lincoln's-inn Fields, we should far prefer that it should be vested in the smallest possible number consistent with the existence of a deliberative body. With more, we have unnecessarily more private interests to consult, more peculation and private jobbing—with the disadvantages of those endless bouts at meeting-making speech-delivering, squabbling, dividing, and quarrelling, which are only endurable when compensated by the consideration that the general will has been gratified, even if the general weal has not been in the best manner consulted. And, in addition, we have this striking circumstance, the selection of these electors must be invidious to the great bulk of members. Each of Walpole's favours made, he said, one friend ungrateful, and ten others inimical. The epigram of the statesman will be but a diminutive statement of common facts under the New Charter. Each elected will probably disdain or contemn the honour, and the thousands of his fellow-members will look on with jealousy and hate. What, indeed, can be more exasperating than the very test of admission—an exclusive attention to surgery? What is it but an outrageous insult to the vast proportion of the members—to whom it says—You have devoted yourself too much to your profession to be fit for the most distant association in its government! Had you limited your knowledge to the few matters we examined you about, when we enrolled you as a member—had you spent in idleness or vice that time and money which were given to the studies required by a learned society, and which are so essentially useful even in the practice of surgery, you might have been *of* us; but studying harder, and knowing more, you must bear your punishment—the ban of exclusion! Oh! wise adaptation of rewards and punishments! Oh! just system of legislation and government!

But it is the more general effects of the New Charter which must force themselves on our attention. Unless our brethren, as we hope they will, shew a spirit different from any they have yet exhibited, the question of Medical Reform is decisively settled. While medical men have been looking forward for some grand demonstration in its favour in the House of Commons, it has quietly received its *coup de grace* from Sir James in the Home Office. The act is unparalleled Under our present form of Government, there never was such a daring use, by a Minister, of the royal prerogative for an unjust purpose. It was an anticipation, or rather prevention, of the will of Parliament, which, it was well known, was to be expressed on this very subject: it was in direct contravention of the wishes of nineteen twenties of all those it concerned: it was a private adjudication on a matter of grave concern, in which the only party heard was that one which will alone profit by the judgment: it was a deed done in the dark, without the counsels or knowledge of those who, it was all-important both to justice and policy, should have been consulted: in short, it was a dirty, shabby, and unconstitutional use of the sovereign's prerogative in the dark, by which, to please the wishes of a few individuals, her Majesty's subjects, both in the profession and out of it, have had the most grievous wrong done to them.

Now that the mischief has been done, it would be only vexatious to enlarge with bitterness on the faults to which it is, more or less, attributable. But it may not be useless to remind the profession that the characteristics we have been shewing in public life during the last few years, if still exhibited, may lead to further evils, and still more woeful disappointment of the hopes we have so long been entertaining, of an equitable and wise settlement of the distracting pretensions of our different medical polities. The tendency of our studies, as well as those of our immediate pecuniary interests, is to bind us to the privacy of our professional duties, and it requires some prudent management in the few, and a higher sense of what is right in the many, than we have recently shewn, to engage us to take that public position which alone can obtain for us public notice, and its *sure* consequence, justice. There is—it may be—an amount of public agitation or prominency which no medical man, as a practitioner, can rightly share in; but worse, far worse, than this is the other extreme, an indifference and apathy towards the aggregate interests of our profession such as we have recently had to deplore. The first may be disrespectable, but the second is *dishonest*. The true study of ethics teaches us that in becoming members of a community like ours, we undertake duties as well as receive rights; and that if nothing requires us to sacrifice ourselves to our profession, nothing will justify our sacrificing our profession to ourselves. Whatever, therefore, our devotion to our own particular interests, in some proportion like it should be our attention to the weal of the general body. Its demands on our services are not matter of choice to

us; they are claims of right, which can only be neglected by a breach of duty, and to the injury of ourselves and the general good. Though we are thus compelled to infer that the slothfulness and apparent indifference of the mass of our brethren is as clearly condemnable in principle as it has been most unfortunate in result, we cannot but see that all kinds of palliations present themselves for it in the conduct of the men who ought to have lead, and those who have affected to lead them in their public excercitations. Since the few displays in which Mr. Lawrence took so energetic a part, and for which he has since so duly done penance,—displays which won for us the famous Parliamentary committees of enquiry, and made medical reform a public question,—we have really had nothing done of an effective kind to induce the bulk of medical men to believe that they had, or could have, a public duty to perform. Associations which might have done something for the question, have been our greatest stumbling blocks. They have talked medical reform out of countenance. They operated as a *quietus* to the consciences of the multitude who, without them, would have felt it a duty in some manner to have bestirred themselves; they shocked many by the spectacle of their want of steady principle—disgusted others by their imbecility, and alienated all, as they destroyed all, by their divisions, their ineptitude, their bustling, and, therefore, most deceptive, *in*activity.

Let us hope, then, that the fatal experience we have just acquired will make us more prudent, and more vigilant, for the future. The Charter of the profession's *real* governing body is granted, and now that the steed is stolen, we shall doubtless have a noble spirit aroused, which, if it will not recover past, may at least, if wisely directed, prevent future losses. Let the profession even now do its duty, and there will be no reason for despair. We think we see in the New Charter the plentiful seeds of discord, the sure guarantees of a future remedy—if those who wish the profession well know how to be true to themselves. It would, indeed, be out of the order of events if, in the long run, a trick like that which has just been played us, should not turn out to the discomfiture of those who most hoped to profit by it.

Menstruation and the Hæmorrhoidal Flux.—Dr. Schultz has examined, by the microscope, the fluid secreted by the menstruating female, and that obtained from hæmorrhoids, and has come to the conclusion that both fluids strongly resemble the portal blood of the liver. This might, *a priori*, have been expected as regards the hæmorrhoidal fluid, but scarcely as respects the menstrual secretion.

Emplastrum Cerati Saponis.—The addition of one part of ceratum saponis to two parts of emplastrum plumbi forms a plaster which, on an emergency, may be used for the emplastrum cerati saponis, but the most legitimate mode is to continue the evaporation until all the vinegar is expelled.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 10th Aug., 1843.

M. Jules Saint Amour has just published the necrological notice on the life of the celebrated Baron Larrey, who died a twelvemonth ago, and whose place at the Academy of Sciences is now occupied by Professor Velpeau.

Jean Dominique Larrey was born at Baudreau, near Bagneres-Adour, in 1766. At 13 years of age he began to study surgery at Toulouse, under the guidance of his uncle, Alexis Larrey. In 1787, he came to Paris, and was, in 1788, after a brilliant examination, appointed surgeon to the frigate, the Vigilant, in which vessel he visited Newfoundland and the West Indies. Some years after, he joined, as assistant-surgeon, the army of the Rhine, under Marshal Luckner, and so distinguished himself by his activity and skill, that General Beauharnais, in his report to the Convention, 27th July, 1793, specially mentions Larrey and his colleagues. Wounded at Wissembourg, and sent to Paris, he was soon after appointed chief surgeon to the Corsican division, but before his departure, he married one of the daughters of M. Laville Leroux, Minister of Louis XVI. On his return he accompanied Napoleon in all his Italian, Egyptian, Austrian, Russian, Spanish, and Polish campaigns, and terminated his military career, at the same time as that extraordinary man, at Waterloo, where he was wounded and taken prisoner. He was created a baron at Wagram, nominated commander of the Legion of Honour at Austerlitz, director of the Hospital of the Gros Caillou in 1815, member of the Academy of Sciences, and of the Academy of Medicine, chief surgeon of the Invalid Hospital, &c. He died at Lyons, on the 25th July, 1842, while on his return from Algiers, whither he had been sent by Marshal Soult, and in which expedition he was accompanied by his son, professor at Val-de-Grace, and Agrégé at the Faculty of Medicine. By an extraordinary coincidence, the Baroness Larrey breathed her last at Bievre, in the arms of her daughter, almost at the same moment as her husband died at Lyons in those of his son.

M. Marshal (de Calvi) read a memoir to the Academy of Sciences, on embalmment by injection of a liquid into the body by the carotid artery. After passing in review, 1st. the different places in which bodies were preserved from decay by natural causes, and, 2nd., the various methods employed hitherto to produce that effect; he came to what his memoir was intended to prove, viz., that the method for which M. Gannal took out a patent in 1837, was not discovered by him, for Berzelius mentioned it in 1833, and that Dr. Francina, of Naples, declared that the best means to preserve a body was to inject by the carotid a mixture composed of lb.ij. of arsenious acid, dissolved in lb.xx. of water, or, what is still better, of alcohol, and coloured with a small quantity of red oxide of mercury, or red oxide of lead, (vide *Gazette des Hospitaux, July* 1835) and concluded by saying that every medical man had a right to embalm a body by injection, provided he did not employ the same liquid as M. Gannal, i.e., the acetate of albumine.

The Society of Medicine of Caen, will give a gold medal, worth £12., for the best memoir on the following subject, "Give a brief history of the last revolution accomplished in medicine, known under the name of Medicine Physiologique;—describe its different phases from its origin up to the present day, point out with impartiality its advantages and its errors, and especially mention in what it it is really useful to science or to medicine." Memoirs in French or Latin must be sent post-paid to M. Etienne, Secretary to the Society, on or before the 1st. March, 1844.

The Society of Medicine of Toulouse, will give a prize of £32. for the best memoir on each of the following subjects.—1st. Point out the influence of the nervous system in the production, and during the different periods of rheumatic affections, from clinical observation, and indicate the modifications the treatment must undergo, according to the various forms of the disease.—2nd. Shew by chemical experiments the active principles contained in the oil produced by the seeds of the different euphorbiæ cultivated in, or indigenous to, France. Shew the best method of extracting this principle, and its use in materia medica.

The Editors of the *Annales d'Hygiene Publique et Medecine Legale*, will give two prizes, of £12. each, for the two best memoirs, one on public hygiene, and the other on legal medicine, leaving the choice of the subject to the authors. Memoirs, in French or Latin, to be sent, post-paid, to M. Ollivier d'Angers, Paris.

The oleum jecoris gadi morrhi has been employed by Professor Trousseau lately in four cases of phthisis in an advanced stage. The patients were all of the female sex; one 48 years old, one 35, the other two from 20 to 22. In three, the amelioration was immediate; the fourth, after becoming worse for some time, grew at last gradually better. The oil was generally administered mixed with syrup, it may also be given in an electuary, in a bolus, in a gelatinous capsule, or in pills, after being solidified. The dose is from ʒiss. to ℥ss. Nausea and vomiting sometimes took place; at other times, the only disagreeable sensation was from the eructations retaining the taste and odour of the oil; rarely diarrhœa: no effect on the circulation and respiration.

A case published by Professor Royer Collard, in the last number of the *Journal des Connaissances Medico-Chirurgicales*, affords another proof of the extraordinary perspicuity Dupuytren possessed. In 1820, a man received a blow on the head from a knife; the wound healed without giving rise to any accident. In 1822, the cicatrix became painful, opened anew, and the broken point of the knife was expelled. The pain continued, and was accompanied by frequent vomiting, shivering, fever, prostratio virium, intermittent delirium, and numbness in the right arm, followed by paralysis; the patient, therefore, entered the hospital on the 2d. December, 1822. Dupuytren, on examination, said that the symptoms could not be owing to the irritation produced on the membranes of the brain by the point of the knife, that there existed in all probability an abscess in the brain, and that an incision ought to be made to allow the pus to flow freely out. Aware of the danger which must necessarily follow so grave an operation, Dupuytren prescribed previously an active antiphlogistic treatment, under which the patient got so much better that he left the hospital. Three weeks had not elapsed before he came back with the disorder considerably aggravated, coma, stertorous respiration, clonic spasms of the right side, immobility of the left. The operation was then decided upon, and performed as follows:—a crucial incision was made on the cicatrix, a portion of the skull was removed by the trepan, and it became evident that the point of the knife had penetrated as far as the dura mater. Dupuytren then divided the membranes of the brain, and plunged a bistoury into its substance to the depth of an inch. At first, some serum flowed out, and was soon followed by a quantity of pus; the wound was then increased, in order to allow the pus to flow more freely. Finally, a sound, such as is used in operations on females, was introduced, and by its means four or five tablespoonfuls were removed.

The changes which took place in the state of the patient were remarkable. During the operation he appeared to suffer, but was unable to express his feelings; after it, he loudly expressed the pain he felt. Before the operation he spoke with difficulty, his left arm was motionless; after it he spoke with ease, moved his arm without difficulty, and felt pain when pinched. Unfortunately, the amelioration did not continue, the patient died a few days after the operation.

In one of my letters I mentioned that a M. D had been prosecuted because he would not speak; another is now threatened with a prosecution for saying too much. Some years ago, a young woman was received in an hospital for the cure of secret maladies. The case, being curious, was published by the physician who attended her, with her age, name, &c., in full. Time passed on, the said person became a *Lorette à la mode*, and formed an acquaintance with a rich nobleman, who was foolish enough to offer her his hand. Learning this,

some one (probably one of her former admirers) sent under cover, a number of the periodical containing the case. As is to be supposed, the noble lover desisted, explaining, notwithstanding, the why and wherefore. The *Lorette*, finding her aim frustrated, wrote in a rage to the author of the article, and threatens to prosecute him for its publication.

Dr. Devergie proposes, instead of the liquor arsenicalis, the following preparation as less liable to produce accidents. ℞. oxyd. arsen. alb. grs. ij. carbon. potas. grs., ij. aquæ distil. i. lb., alcohol rect. gtt. x, tinct. cochenil. q. s. to colour the mixture. ℈i. is equal to gtt. i. of the liquor arsenicalis. Dr. Devergie has employed it with considerable advantage in chronic diseases of the skin, especially those offering the squamous form. The parts of the cuticle previously affected, offer almost always spots of a dark brown colour during its administration. Dr. D. considers their appearance as a favourable symptom.

The strychnos nux vomica, and its active principle, strychnine, is recommended by Professor Trousseau and M. Rougier in chorea. The doses are of the former, adults, from gr. ij. to gr. viij. and grs. xij. p. diem; children, from 10 to 15 years old, 1 gr. to 6 gr.; under 10, 1-5th gr. to 3-5th gr.; of the latter 2 pills p. diem, containing 1-16th gr., increasing the number gradually to 3, 4, and 6, until tetanic symptoms manifest themselves; the strychnine must then be discontinued, and a draught, containing a small quantity of ether and opium given. After an interruption of one or more days, the alcali must be taken again, and persevered in some time after the disappearance of all the symptoms, in order to obtain a perfect cure. Chorea at first appears to be increased in intensity, but on continuing, the disease yields gradually.

M. Guersant, in a case of the same disorder which has recently occurred in the Children's Hospital, gave sulphate of quinine and cinchona united with the carbonate of iron; the child recovered.

The poor of Paris on the charity list are:—Families which receive temporary succour 10,424—families which receive annual succour, 14,385—families which receive special succour 80 years old, 1,233—70 years old 1,962—blind, 1,054 paralytic, 239. Total, 29,295. In 1829, the total was 30,361—in 1832, 31,723—in 1835, 28,969—in 1838, 26,936. The families are composed of 66,487 individuals, or men 15,495, women 25,704, boys 12,628, girls 12,660.

At the last meeting of the Medical Society of the Temple, several curious facts were mentioned. M. Lozes stated that in 1830, a woman broke a pane of glass, and was slightly wounded in the hand, the part soon got well. In 1838, she was seized with a pain in the bend of the arm, and a foreign substance being easily felt, an incision was made, and a piece of glass four centimetres in length was removed.—A lady, in making a sudden movement, ran a needle into her hand, which she asserts never came out. Some months after, she became in the family way, and during pregnancy complained that something pricked her near the umbilicus. She was, however, delivered without accident of a fine child. Two months after, an abscess formed itself in the infant's thigh, broke, and a needle, completely oxydated, was expelled, and which the mother affirms to be the identical one that entered her hand.—M. Gaide gave the details of a *post-mortem* examination of a prisoner at Clairvaux. The man had swallowed, eight or ten years previous to his death, an iron fork. The prongs were directed upwards, the back of the fork corresponding to the anterior wall of the stomach, several excrescences had sprung up on the mucous membrane between the prongs, and kept the fork motionless. The central parts pierced the coats of the stomach, and penetrated the transverse colon; finally, the handle touched Poupart's ligament, which offered a slight depression.—M. Bourrieres read a paper concerning a mineral spring, lately discovered in digging the foundation of a new house, Rue de Vendome. He says it is sulphureous, contains free sulphydric acid, and alcaline sulphurets, and appears to be of the same description as those of Enghien, near Paris.

A curious fact, published in *Il Raccoglitore Medico*, proves that vaccine matter may remain latent in the system, and finally shew itself with its ordinary symptoms. A child, three weeks old, was vaccinated in both arms, in June 1842. Four pustules appeared on the right arm as usual, nothing on the left. Six months after, the spots appeared on the left arm, accompanied by fever, and followed by pustules, which went regularly through the different stages.

Academy of Sciences—Sitting of the 7th of August.—M. Gannal read a letter in answer to the memoir of M. Marshal (de Calvi) in which he asserts, 1st., that he had employed his method of embalming previous to 1833.—2nd. That his patent cannot be attacked, and 3rd., that M. Marshal has added nothing to what was already said in a law suit gained by himself, *M. Gannal.*

M. Moreau de Jounes read a paper on the different causes of insanity. They were taken for the year 1841, and in order to render the result more exact, only one half the number of patients was computed; as regarded the other half, the causes being considered doubtful or unknown.—1st. Physical causes; idiotism, 2,234 cases; epilepsy, 1,137; drunkenness 792; excessive irritability 665; decrepitude 541, poverty 329; onanism 293; fever, phthisis 245; over-exertion 176; blows and wounds 155; other causes 408; total, 6,964. Calculated on 1,000 cases, idiotism offered 321; epilepsy 163, drunkenness 114; excessive irritability 94; decrepitude 78; poverty 47; onanism 42; fever, phthisis 35; over-exertion 25; blows and wounds 22; other causes 59.—2nd. Moral causes. Grief 1,186; love, jealousy 767; religion, fanaticism, 471; ambition 314, pride 291; politics 118. Taking 1,000 cases, grief produced 377; love, jealousy, 224; religion (fanaticism) 150; ambition 100; politics 37. Thus, on a total of 10,111, physical causes acted 6,964 times, and moral causes only 3,147. Or, on 1,000 cases, the former produced 688.8, the latter 314.2. On examination of the causes generally, we find that none are of recent origin, none are indigenous to the country in which we live, and as the same causes produce the same effects, it is rational to conclude that insanity, like other evils, is inherent to our frail condition, and that the progress of civilization cannot be considered as a cause of insanity.

Academy of Medicine—Sitting of the 8th August. M. Tanchou read a memoir on the action of different substances when applied to the skin. After enumerating the different powders he employed, such as camphora, atropa belladonna, murias ammoniæ, antimonium tartarizatum, hydrargyri submurias, digitalis purpurea, cicuta virosa, sulphas ferri, combined with one-fourth, one-third, one-half, two-thirds, of the powder of althœa, or amylum; he concludes, 1st., that absorption is far more considerable than is generally admitted.—2nd. That this method is useful in all kinds of tumours, especially those which tend to become cancerous.—3rd. That its action is increased by compression, exercised by a band on the limbs, and an appropriate bandage for the breasts.—4th. That in tumours of the mammæ, the compression must be exercised by a substance of sufficient elasticity to model itself as it were to the different anfractuosities, without hindering the movements of the body, or wounding the gland by the hardness of its edges. This result is to be obtained by making use of a cushion, made of caoutchouc, and filled with air.

M. Capuron read a report on a new kind of forceps, which offers a double mortise; so that in a case of labour, whichever branch was introduced first, the difficulty of uniting the two no longer existed.

GARLAND DE BEAUMONT, D.M.P., B.L. & S.
Honorary Physician to the Spanish Embassy.

INSANE HOSPITALS.—The government is about to build four large hospitals for the insane poor in Ireland. They are to be on a very large scale.

REVIEWS.

A Medical Visit to Gräfenberg, in April and May, 1843, *&c.* By SIR CHARLES SCUDAMORE, M.D., F.R.S., &c.

THE medical madness of the day—and there always is one—is not, what our proximity to the dog-days might suggest, that of hydrophobia. Since Pindar honoured water with its most eulogistic of epithets, "*ariston*," it was never in higher estimation than now. If eating and drinking form—as Sardanapalus told us in his epitaph—the sum of a wise man's waking existence, water is now become something more than a half in many men's sublunary economy. In the words of an enthusiastic follower of Preissnitz, it is now a pharmacopœia in itself; and, from a hydropathic song before us, we learn that it is "health"—"the medicine Nature gave"—"the fountain of inspiration to the muses"—"Nature's panacea," and the possessor of merits which, if true, make teetotalism a new invention for turning earth into heaven, and prove hydropathy to be an inestimable discovery by which our freehold in it shall be made eternal. We have indeed only to believe our new writers, and the man who persists in being sick, or pertinaciously dies, while cold water is attainable, is either a deliberate suicide or madman.

Cur moriatur homo cui salvia crescit in horto.

Now, we do not much regret this mania which has so suddenly grown up. That it will do some mischief there can be, we consider, little doubt; but it will be limited, and not, we trust, at all commensurate with the good. The *furor* which now rages, like that which existed for brandy and salt, must soon subside: and our reminiscences of hydropathy will be those of a large imposture, which—duping in its day a number of invalids with very pleasant hopes, and hastening, it may be, the departure of a small per centage of the more feeble of them—has suddenly disappeared, leaving a progeny better than the parent—a more lively consciousness of the blessings of cleanliness, and a usefully repeated experience of an old truism—the limited but still most valuable medicinal properties of water. This is a qualified opinion we have long entertained, and the accession of Sir Charles Scudamore to the ranks of the hydropathists does not at all affect it. His book is no more convincing of any greater efficacy in water, than many of our old English and some Continental writers. Indeed, if we take Sir Charles's own statement, water would seem to be among the least important of the agents employed by Priessnitz. A pure air, with a new and vivifying change of scenery—vigorous exercise—a simple and nutritious diet—the absence of all mental and physical stimulants or depressors—the most rigid cleanliness; these are agents, with the use of baths as ordinarily prescribed, which in themselves are sufficient to explain most of the much-vaunted cures of hydropathy. The value in the *modified* water applications is their assistance, as laxatives and diaphoretics, in getting rid more expeditiously of morbid accumulations which are unfavourable to nutrition, and as tonics (through the cold baths) in invigorating the thence improving system. In all this we have no new idea: it has been, we believe, the invariable practice of every physician who knew his profession, when he had a fatally contaminated constitution to deal with, to direct his efforts to a change in the system. Hence our attention to change of air, sea baths, avoidance of stimulants, imbibition of mineral waters, use of alteratives and aperients, &c., so that we may truly say of hydropathy, to our credit, that whatever is good of

it, we were already in possession of—whatever is mischievous in it, its zealots alone have the merit of. Perhaps, singularly enough, no better authority for these opinions can be cited than Sir Charles Scudamore, in the work before us. He tells us that Liebig, whom he visited, entertained a high opinion of the *rationale* of Priessnitz's system, but compared its best effects to the result of the use of "purgatives, and a walk to Milan." Sir Charles then adds:—

I am well convinced, from long experience, that, in the distinct use of medicine for important chronic diseases, the preserving use of alteratives and aperients comprises the only effectual method of cure; diet and regimen also being regulated. In this way I have been often successful in the treatment of the more aggravated cases of chronic gout, chronic rheumatism with sciatica, chronic hepatitis, and other maladies which had taken their deep hold of the system. Let it not be supposed, therefore, that I lose my respect for the practice of physic in the approbation which I bestow on the system; but I do very deliberately declare, that there are states and conditions of disease, especially those of a gouty and rheumatic nature, in which I would prefer the water-cure treatment to any other; used either distinctly, or in alliance with some medicine. The "walk to Milan" reminds me of the physician who sent a nervous patient to a very distant part of Scotland, on the pretence that he would there find one who was particularly successful in his description of case. He searched for him in vain, and on his return vented his displeasure on the physician for the cheat; but he was cured!

We conversed on the subject of diet. Liebig remarked that coffee impeded the digestion of food for an hour or two, its carbonaceous principle requiring oxygen; that green tea should be looked upon as a poison. He was himself much in the habit of taking black tea; but, for the water-cure, considered milk and water the fittest beverage, morning and evening, and that no wine should be used; water only. When he wished to study for a continuance, he took coffee, to delay the return of hunger. The smoking of cigars he condemned as prejudicial to health, much gaseous carbon being injuriously inhaled, and unduly robbing the system of oxygen.

Sir Charles, of course, praying for a Hydropathic Hospital,* "deliberately" recommends hydropathy: like the ape who lost the tail, he has not undergone the martyring process without feeling also a wish to get credit for his self-immolation, and exhibiting a natural anxiety to be backed by a few fellow-sufferers.

In the following case we think that Gräfenberg is somewhat at fault. The poor man might have been killed with the *douche:* at least, all the good done him by what we should call the legitimate medical treatment in his case, viz., change of scenery, natural repose, cold ablutions, &c., stood a good chance of being undone:—

A clergyman and schoolmaster, aged 35, had too intensely exercised his mind and feelings, and brought on so distressing a state of nervousness, that, in preaching, he became painfully confused n a quarter of an hour, He had severe indigestion with opposite states of the bowels, but most commonly inert; head-ache with confusion, noises of the ears, and dimness of sight; as in the last case, heat of the scalp and extreme coldness of the feet; depression of spirits, with distress that he was incapable of any mental exertion, being an ardent student. He was much affected by every change of weather. His treatment consisted of lein-tuch and tepid bath, with plunging bath, sitz-bath, head-bath 3 times a day, foot-bath twice a day, the soles of the feet being diligently rubbed; the body bandaged. He drank water freely; and he had abriebung whenever the head was more than usually uncomfortable. After about a fortnight, the use of the douche was added to the treatment.

* See page 97.

He described, in glowing terms, the happy improvement which he received after 10 day's treatment, and especially in his digestion and the state of his head; but when he had employed the douche for a week, he was apprehensive that it did not suit his nerves, for his head became painful and confused after using it.

In all these cases of great morbid sensibility of the nerves of the head, it appears to me that the application of the volume douche, if ever used, should be much delayed; and that the jet shower bath, applied with only moderate force, continued from one to three minutes, is a more appropriate remedy.

Here is another case, of greater interest:—

A gentleman, aged 33, having used mercury with great freedom, and been careless in exposing himself in unfavorable weather, fell into a state of great debility and nervousness, and gradually became almost bald. He went to Gräfenberg in this state, and was described to look more like a corpse than a living person. His first treatment was a sitz-bath, two lein-tuchs, followed by a shallow tepid bath and free drinking of water. Afterwards, he sweated in the blanket, and used the plunging bath every other day; douching also on most days, but omitting one lein-tuch, and not using any on the day of the blanket. He drank water freely, and took as much exercise on the mountains as his strength would allow. Soon after his arrival, the few hairs on the head which he brought with him disappeared, and the baldness was complete. Boils formed particularly at the nates, and suppurated freely; when the treatment was reduced to the use of two lein-tuchs and a sitz-bath. Soon after, an eruption appeared over the whole body; first vesicular, and afterwards scaly, also more boils. The linen was stained with appearances which were supposed to arise from mercury. At the end of six months, he gained some colour of the cheeks, and became stronger; but also new shoots of hair appeared on the head; and which in two months more so increased, that when I saw him, two months later, he had a fine head of hair! He was pursuing regular treatment, and evidently was quite in a fair way of recovery.

During my stay at Gräfenberg, I heard frequent mention of the stains of mercury and of iodine appearing in the lein-tuchs, either of blue or reddish color; but Priessnitz assured my friend, Dr. Buxton, that he had seen mercurial globules issue at the ends of the fingers after a continued course of the water cure, in patients who had made a great employment of mercury either internally or externally, or both, notwithstanding that that they had desisted from all use of the medicine even several years! This appears almost incredible. I cannot doubt the veracity of Priessnitz; and Liebig, with whom I discussed the subject, had no doubt of such a fact, and offered this explanation: that mercury combines with animal matter, and may remain so combined for an indefinite time; and that the quick change of matter which belongs to the water-cure treatment would tend to the separation of the mercury, which might appear in a globular or other form.

But we must now leave the book, with no high opinion of its merits, either in its literary or professional aspect. It is, we think, in every way unworthy of the author's reputation. It would seem, indeed, that, in undergoing the hydropathic process, the old molecules of Sir Charles's brain had suffered a very rapid and complete elimination, and that he has been obliged to act the author with the disadvantage of a new and untried mental organ, of which water formed so large a constituent, that its emanations must, as a matter of necessity, be—what this book is—eminently insipid and wishy-washy.

Observations and Facts relative to those born Deaf, and consequently Dumb, &c. By W. Wright, Lecturer, &c., Surgeon Aurist to the Duke of Cambridge &c. Strange.

This gentleman, who boasts of winning the confidence of the noble and the royal by his superior cleverness as an aurist, gives the weight of his authority to the opinion, that general practitioners know nothing of the pathology or treatment of diseases of the ear. He cites the opinion of Abernethy, who, he asseverates, acknowledged that no surgeon of his day even knew how to syringe the ear, and of Astley Cooper, who avowed to the Duke of Wellington, in the hearing of Mr. Wright, that "no general surgeon," and more wonderful still, "no hospital surgeon, knew how to treat affections of the organ of hearing." The assertions, in both cases, we presume, were made to aural patients, for how ears could maintain a normal condition, and be visited with "crackers" like these, is more than we physiologically can explain. Surgeons in those days, perhaps, did not pay the same attention to aural or ocular maladies as they do at present, but it costs little to assert, and not more to believe, that whatever was known of them, was confined to the general body of practitioners, in whose education and experience such infirmities must have been constantly presenting themselves for observation and treatment. But if general surgeons are ignorant on this subject, we have only to believe Mr. Wright, and the "aurists," are not a whit better informed, though considerably worse conditioned; for to the ignorance of the quack, it would appear, they exhibit the temerity of the butcher. Deleau, Kramer, Churchill, Shmalz, Hendirksz, Sprenger, Lax Muzzoni, Peez, Felibien, Merle, Saeves, Barrier, Curtis, our friends Messrs. Thornton and Yearsley, Saunders, are all dispatched by our author in a sentence or two, as quacks, or nobodies. The whole sixteen pages, indeed, are devoted either to the scarification of his brethren, or the elevation of himself. Taken at his own words, he is the only scientific or successful aurist in the kingdom. Without the smallest wish to disparage Mr. Wright's judgment, we should be very sorry indeed to think him right.

A Pastoral Letter to the Parishioners of St. Clements Danes. By the Rev. W. W. Ellis, Rector.

This is a little book out of our way, but since, by presentation to us, it *has* come in it, we take the opportunity of assuring the Rev. Rector, that if he would have us or his parishion-rs to appreciate, in its full force, the anxious charity which he expresses in this well-written address for his congregation s comforts and happiness, temporal and eternal, he cannot do better than by at once exerting himself to remove a great hindrance to both—a nuisance which disgusts people from church duties, while it unfits them for those of ordinary life, we mean, daily and weekly interments within and around his church, in a ground crowded with human decomposition to the surface, and filling with a pestilent and ceaseless effluvium, the atmosphere of the greatest of London thoroughfares—the Strand, and—as the rector has it in the tract—the most densely crowded of its neighbourhoods. In page 7, Mr. Ellis tells us, "I gladly embrace this opportunity of assuring my parishioners, that the churchwardens are kindly rendering every assistance to secure the general comfort and convenience of those who occupy seats in the church, and they are now contemplating an improvement in the ventilation of the building during the summer." Our office directly facing the church, and its *horrible* grave-yard, we can well understand the necessity of this ventilation, and we trust the good sense will aid the piety of the worthy rector and churchwardens in discovering and feeling, that ventilation, with an at-

mosphere reeking with the pestilent rottenness of the dead, is but a poor remedy for the suffocating oppression caused by the hot exhalations of the living. We invite Mr. Ellis, then, to this high labor of true charity. We never love religion more than when, even in self-sacrifice, it exhibits its power in such active benevolence as this, and on so large a scale.

The Life of Dr. Mesmer. By A BELIEVER. Buchanan.

THIS is an odd little pamphlet, which shews, if not the unsettled state of science—that of minds. It seems written by one encyclopædic as to thought and knowledge, though anything but encyclopædic in their arrangement. Those who did not know it before, learn from the writer, that Mesmer began life as a writer on astrology, and student in all that was extraordinary and mysterious—exhibited, nevertheless, the prudence of marrying a wealthy lady—then tried a physicianship in Vienna—experimented in that capacity with the magnet, which, under his guidance, and that of the Austrian astronomer-royal, Hill, worked the most wonderful cures, (oh, these wonderful cures !)—left Austria from semi-persecution, *to take solace and council from a man famous as a conjuror and exorcist,* the Rev. Dr. Garsner, of Regensburgh; returned thence to Vienna, to recommence, as physician, with the aid of *animal* magnetism; sought communication with learned societies, but would not reveal his secret; cured, or was believed to have cured, by mesmerism, a young girl, (Miss Paradise,) of blindness, and extremely ill state of general health: in the hubbub and opposition thence arising, exiled himself to Paris, where he consoled himself with making £16,000 in two years by his novel manipulations; refused, from the French minister, a pension of 20,000 francs for life, with a donation of 10,000, as the price of publishing his secret, and proceeded, with that course of action and policy so well known to the public, which, varied with squabbles among the believers, enquiries and condemnations of academies, visits to Spa, Meersburg, England, and Thurgau, terminated with his death in privacy, but amid much riches, in March, 1815, but *where* the writer does not say. Thus much for the biography. The learned author adds to a very incongruous style of writing, a very incongruous kind of faith. He appears to believe in that most incomprehensible of creeds—pantheism, and is, in his twenty-four duodecimo pages, as learned on cosmogany as the erudite Ephraim Jenkinson of Dr. Goldsmith. To him, even mesmerism has no greater recommendation than that it is "pantheism in physic." Prepared for the non-appreciation of his abstruse dogmas, and profound fancies, he has selected for his motto, "sublime discoveries and thoughts of others cannot be fathomed, but by the line of our own thinking," which means, we suppose, that none can comprehend him, but himself. How lucky for us that all great men have not been similarly fated!

*

Pulmonary Consumption successfully treated with Naphtha. By JOHN HASTINGS, M.D., Senior Physician to the Blenheim Street Free Dispensary.—CHURCHILL.

WE have recently more than once adverted to this novel mode of treatment in cases of phthisis; and without being quite sure that the author and ourselves have not already said enough on the subject, enter now on the task of analysing Dr. Hastings's more elaborate lucubration.

The book consists of eight chapters, with a preface. We shall not follow the author into his views on the "causes," "symptoms," "complications," "pathological conditions," or "diagnosis" of phthisis, which form five of his eight chapters. We will, if Dr. Hastings will not, suppose our readers as much *au fait* on these points as the standard works on consumption can make them; and if they seek anything further, we shall only remark that the Doctor's book is not the source one need take any trouble of applying to, for his doctrines do not strike us as novel, and we see nothing in the mode of their enunciation which makes their republication a boon to readers. We shall, therefore, confine ourselves to the "treatment." Dr. Hastings tells us he was led to his new remedy by the consideration that tubercles were "fatty"—that there was, therefore, carbon in them—that those suffering under them, lost fat rapidly—and that, probably, an agent rich in carbon and hydrogen, like naphtha, might introduce a new action into the organism: or, to give his own—we cannot say, *better*—words,

That such a change would by that means be introduced into the constitution as would act upon the forces of the organism at the point of departure from health, whether that took place in the stomach, blood, or elsewhere:—that change tending to such an affinity in the elements within the body, that the carbon, hydrogen, oxygen and nitrogen, instead of assisting in the formation of products which threaten life, would tend to develope those materials only which are required for the perpetuation of health, and the prolongation of existence.

The description of naphtha, is very properly given. It appears that there are different sorts, and that but one of them, that known as *pyro-acetic* spirit, is adapted to meet the exigencies of the cases we are considering. This may be thus recognized:—

My test was its colourless and transparent character, and agreeable etherial alcoholic odour; its specific gravity, which was 0.823 to 0.824; its increase of temperature consequent upon mixture with water; its preservation of appearance on the addition of nitric acid; and its taste being warm, without the least sensation of burning. Dr. Ure has recently suggested an easy method of effecting this object, which is founded on the following facts. If nitric acid of specific gravity 1.45, be added to pyroxylic spirit the mixture assumes a red colour, but no effervescence takes place. If the same acid be added to pyro-acetic spirit, there will be no change of colour, but an effervescence will slowly be formed, accompanied with an elevation of temperature, and copious evolution of gas, resembling in appearance the action resulting from the mixture of alcohol with nitric acid, but with an acetic smell, instead of an etherious one. Pyro-acetic spirit may also be generally distinguished from pyroxylic spirit by its causing no appearance of milkiness on mixing with water, in the state in which it is met with in commerce.

The doses are thus managed:—

I administer naphtha three times a day, in doses of fifteen drops for an adult mixed with a table spoonful of water, which is proportionably decreased according as the patient approaches youth. After the second or third day, I increase the dose by about one fourth; regulating its increase or decrease, according to the absence or presence of nausea, sickness, or any other untoward symptom arising out of its use. As the disease advances, I increase the dose to forty and even fifty drops, and administer it four times a day instead of three times.

The successful use of naphtha, as an internal remedy, induced me to try its effects by inhalation, to which I was the more inclined from the results of the following experiments:—

1st.—A little naphtha having been put into a bent tube, resembling the capital U, some expectorated matter was poured upon it, which had been determined with the microscope to be rich in globules of tubercle. Gentle heat was then applied and the naphtha driven off, when the super-imposed secretion presented a mere shapeless mass of animal matter, the globules having entirely disappeared.

2nd.—Some tuberculous secretion highly charged with globules of tubercle was placed under the field of the microscope, and a drop of naphtha added, when an immediate disappearance of the globules ensued, leaving behind a mass of the same character as on the former case. The frequent repetition of this experiment, invariably led to the same result.

3rd.—Some tuberculous secretion of the lungs was put into a portion of the intestine of a child, and placed over a wide mouthed bottle which contained a small quantity of naphtha, between which and the intestine a clear space of three inches remained. A spirit lamp was then placed under the bottle, and a very gentle heat applied until slight ebullition took place, which was continued for an hour. The contents, when removed from the intestine and examined with the microscope, presented the same appearance as described in the previous experiments.

Considerable benefit resulted from the inhalation of naphtha, in lessening the difficulty of breathing in the most advanced cases, in rendering muscular efforts less painful and fatiguing, and in a general alleviation of all those symptoms which distress the consumptive patient. The expectoration is not unfrequently rather increased immediately after the inhalation of naphtha, but the cough has changed for one a milder character. Improvement was generally observed to follow that kind of inhalation which was performed with little exertion It may be employed several times in the day, unless it produces nausea and sickness, when its use should be suspended; and on its being resumed, in such cases, it should be applied for a shorter period. When there is spitting of blood, its use is not admissable.

Dr. Hastings now gives us thirty-seven cases, in each of which the patient is supposed to have laboured under pulmonary consumption, and is asserted to have been cured by the new remedy. The name and address is in every case given, and our readers will not fail to appreciate the wisdom, as well as apparent good faith, exhibited in so essential a circumstance. If the existence of phthisis were but *demonstrated* in the cases presented to us—and Dr. Hastings's conviction as to his cures confirmed after any short lapse of time, by such an authority as Dr. Williams, whose lectures we are weekly giving—we know nothing more that we should require to induce us at once to offer a *Te Deum* for the good fortune that has arrived to the hitherto almost hopeless consumptives, and to make our compliments, with the utmost respect, to the worthy author of this book, as the instrument of so wonderful and beneficent an innovation. As it is, we will wait further information before growing excited at the glittering prospect now opened to us—a prospect so often before presented to the world, only, alas! to charm, beguile, and disappoint it. We give Dr. Hastings's twenty-ninth case; it well serve the purposes of our readers as well as the whole thirty-seven:—

Mr. Zillwood, a married man, aged forty-two years, and master of the Blind School, Queen Square, Bloomsbury, shortly after his birth was bereft of his mother's care, who died of consumption, and several other branches of his family were also cut off by that disease. Through his usual medical attendant, Mr. Whidborn, I was consulted on the twenty-fourth day of May, 1843. As a child he was not strong, and at no period of his life had he enjoyed robust health. He was very liable to take cold, which always terminated in cough, and for several winters he had suffered from expectoration as well as cough. He had been long subject to indigestion, his bowels became relaxed from very slight causes, and his appetite was rarely good. About two months ago he had a severe attack of acute rheumatism, which gave way to the usual

remedies. He had chronic pains in several joints of the upper extremities, which were still a little swelled. The cough, expectoration, difficulty of breathing and nocturnal perspiration were severe, and his general appearance betrayed considerable emaciation. Percussion nowhere yielded an unhealthy sound, except over the upper region of the chest on the right side, where great dulness existed, and the respiratory murmur was scarcely audible, the dry crackling *rale* being distinct, whilst on the opposite side it was puerile. Below the dull space on the right side, the sounds of the heart were very evident, and an abundance of sibilant, sonorous, and sub-mucous rattles were present. He was ordered a saline draught, and a pill containing a grain of calomel, and a third of a grain of opium, every six hours, and a little compound iodine ointment to be rubbed into the painful parts night and morning. In the course of nine days, during which period his mouth became sore, a considerable amendment was perceptible in the rheumatism, and the cough and expectoration had diminished. The same dull sound below the right clavicle was the result of percussion, and the only improvement in the pulmonary symptoms were those which indicated bronchitis, namely, the sibilant, sonorous, and sub-mucous rattles; these were almost replaced by a healthy respiratory murmur, which continued to be nearly inaudible below the right clavicle. In the course of twelve days from the commencement of the naphtha treatment, which was given in doses of fifteen drops, the nocturnal perspirations ceased, followed by diminished cough, expectoration, and less difficulty of breathing, the appetite was natural, and the bowels regular. Percussion yielded a much better sound below the right clavicle, where the respiratory murmur was distinctly audible, with an entire absence of the dry crackling *rale* and a diminution of the sounds of the heart, whilst on the left side, the puerile character of the respiratory murmur had almost disappeared. The dose of the naphtha had been increased to twenty drops for some days. On the twenty-sixth of June, being the thirty-third day of the treatment, I learned from Mr. Whidborne that the patient continued to improve, and that on one occasion being for a day only accidentally without his medicine, an evident change for the worse ensued, which was quickly removed by resuming the medicine the following day. Upon inquiry lately, I find he is quite well, not having had for some time an occasion to use the naphtha.

Our readers will have seen that Dr. Hastings is wise enough not to disclaim the use of other therapeutic agents, which, indeed, the action of the new remedy makes the more necessary. For we are told that it often causes headache, particularly when the bowels are confined, in which case, if aperients fail, the application of a mustard poultice to the back of the neck, or a few leeches to the temples, or behind the ears are recommended. Our author considers naphtha an excellent tonic, and asserts that it increases rapidly the appetite, causes cheerfulness, rapidly gives greater freedom of breathing, and that it possesses a marvellous power over the colliquative perspirations and diarrhœas which form the terror of the medical attendant in cases of phthisis. We trust it may realize these glowing expectations; and, in the meantime, from consideration of the nature of the malady, as well as of Dr. Hastings's recorded experiments, have no hesitation in recommending our brethren to give it a trial.

In conclusion, we may say that though we think that all that is worthy perusal in this book might have been published in one or two articles in our own or any other medical periodical, with equal advantage to writer and reader, we are yet pleased to be able to own that the work is written in a spirit that deserves all praise. There is no thought of concealment, no shadow of empiricism shewn: the author always maintains a respectable position, never forgets to be candid and open, and writes apparently less for himself than for the profession. As such, we give him personally the humble meed of our approbation, and wish his labours all the success he anticipates from them.

PHYSIOLOGICAL NOTICES.

1. *The Left Ventricle* begs to announce to the presidents, vice-presidents, and councils in Lincoln's Inn Fields and Trafalgar Square, that it cannot possibly continue to propel *venous blood through the liver* more than a quarter of a century longer. It will be happy to propel arterial blood through the hepatic artery until doomsday, or any later period the authorities may be pleased to specify, but is fully determined to take the earliest opportunity of resigning the undignified office of propelling portal blood through the portal trunk, branches, plexuses, and hepatic veins.

2. *The Spleen* humbly begs to inform the same learned bodies, that it (Spleen) is the root of an unfortunate *vein* out of employment; but which vein, although a vein, has certain remarkable peculiarities which render it perfectly competent to carry on the circulation through the liver, and serve in the triple capacity of recipient cavity, propulsive agent, and afferent vessel. An auricle, a ventricle, and an artery, would do no more—N. B. The duties of the office being of the slow and easy sort, a nominal salary only will be required.

3. *The Thyroid Gland* begs to express its conviction, that the left ventricle cannot efficiently propel blood through the cerebro-spinal capillaries by applying propulsive force to that blood only behind, or on the arterial side of those capillaries. It has also to state, that if the honourable presidents, vice-presidents, and councils, chirurgorum et medicorum, will permit the left ventricle to send it (Thyroid Gland) plenty of blood laden with propulsive force, that it is ready to pledge its honor as an organ, not to rob that blood of such propulsive force, but to see it safely conveyed to, in order that it may impinge on, the tardy currents in the internal jugulars, and left vena innominata. By this means, the Thyroid Gland confidently believes it would be easy materially to increase the rapidity of the return of blood to the heart by the superior cava, and thereby to accelerate and strengthen the *cerebro-spinal circulation*, the only function in which the Thyroid Gland can condescend to play a subordinate part.—N.B. The Thyroid Gland suspects the cerebro-spinal circulation must be particularly sluggish and feeble in those who have ever written to the effect, that it is reasonable or *possible* for the heart to propel blood through the *liver*, either before birth or after.

4. *The Thymus.*—The narcotic influence of this organ is such as to render it highly probable, that as it is a "gland,"—it secretes a salt of morphia. Perhaps some physiological chemist, or chemical physiologist, will take the trouble to ascertain whether it does or not, and then read a paper upon the subject before one of the medical societies.

Aug. 7, 1843.

Rupture of the Uterus, Hydrencephalus of the Infant.—Dr. Malcolm has placed on record the particulars of a case of rupture of the uterus, from the hydrencephalic state of the infant, which terminated fatally. The membranes broke on the 30th of January, 1832, at 6 o'clock a.m., the rupture of the uterus occurring the next day in the evening, from the efforts of the patient to bring on parturition. The friends would not allow the operation of gastrotomy to be performed until after death. The patient survived the rupture about fifty hours.

RICKETS, THEIR ETIOLOGY AND TREATMENT.

By A. W CLOSE, Esq., Manchester.

Most writers on the theory and practice of physic, state that the disease termed rickets appears only among the lower orders of people, or amongst those of an upper rank who are put out to nurse, when the same interest cannot be taken in the welfare of the child as if it were brought up at home. This opinion is, I believe, fallacious. I have met with the disease very frequently, amongst the children of the middle classes, where the parents were healthy, free from scrofulous or syphilitic taint, and the child a first and only one, having the best attention paid to all its wishes and wants. In all cases, I feel persuaded, its incipient state and first moving cause may be traced, chiefly, to a deficiency in the supply of the *nutritive nitrogenized substances.* The fact of its occurring more frequently amongst the poor, and in large manufacturing towns, may be attributed solely to their great numerical preponderance in such places.

It is seldom observed, until after the child is weaned, because the milk contains those elements which are exactly suited to the purposes of its progressive organization;—when it arises before that period, it will be found to be owing to a deficient supply of the lactic fluid; no suitable substitute being added. After weaning, the diet of children, amongst the poorer classes, consists chiefly of potatoes, oatmeal gruel, tea, coffee, rice, and that of a very inferior kind. Now, the two former of these contain very little *proteine;* the latter, none. No doubt, amongst this class of persons, there are many other circumstances which conduce to, and precipitate the disease, such as—a damp and cold residence, impure air, bad nursing, inattention to cleanliness, and want of due exercise. The article of diet most commonly administered to the recently-weaned child of the middle and upper classes is, sago, rice, or arrowroot—the last is frequently recommended by one lady to another, as being sure to make the "dear infant" fat and plump—such is its effect upon them as with fowls so dieted. These substances, as has been proved by Liebig, are incapable of transformation into blood and muscular fibre—but these the child requires. In the course of the last few months, I have had several such children brought to me, with bowed legs, distorted clavicle, partially curved spine, and weak ancles—the mothers commenting upon the symptoms with great surprise, that the child should be "so fat, and look so well, being, as every body said, a very fine child." On inquiry, I have invariably found that the diet mainly consisted of sago, rice, or arrowroot.

The treatment I have adopted, has always speedily improved the state of the child. Of course, it has consisted in a complete change of diet, and the administration of *nitrogenized substances*—beef-tea to be freely given, eggs, and wheat-ground and made into bread, without the separation of the cuticle of the grain, in which is contained the phosphate of lime, to whose absence the softened condition of the bones is usually attributed. In the way of medicine, I have found the preparations of iron most useful—the Ferri Sulph. or the Tinct. Ferri. Mur., or the Liquor Oxysulph. Ferri, the preparation recommended by Mr. Tyson, in the 6th volume, page 117, of the Medical Times.

The difficulty of treating the disease amongst the children of the poor, bears out these views. I have tried mercurial alteratives, frictions to the abdomen, and the Tinct. Digitalis, com-

bined with the Tinct. Ferri. Mur., the warm bath—these followed, if possible, by change of air—with most success. Now, indeed, I feel disinclined to give the credit to the medicinal, but rather to the dietetic treatment, which was enforced and obtained by extra labour on the part of the parents. Since the price of animal food has been reduced by the altered tariff, the disease has been less prevalent amongst the poor.

CURATIVE AGENCY OF MESMERISM.

(To the Editor of the "Medical Times.")

Sir,—Will you allow me to make a few remarks in answer to your correspondent of last week, Dr. Packman, who has witnessed some of the most extraordinary results of mesmerism, and is aware of one very beautiful cure of deafness by M. Lafontaine, and yet because M. Lafontaine has failed to cure some cases of paralysis, cerebral congestion, deafness, &c., of his own, "which were past relief by ordinary means, but which might, probably, have been cured by mesmerism had sufficient time been allowed;" he comes to the conclusion, whilst refusing to make any experiment himself, "that mesmerism will not be found of any service in medical cases." He believes it may "be available in surgery;"—considers it "worthy of investigation," and, "in a scientific point of view, to be a matter of great interest;" and yet, because, in the first novelty of the matter, ignorant persons, and young ladies and gentleman, may make a play-thing of it, he regards the result with fearful apprehension, and thinks the practice of mesmerism calculated to do an immense deal of harm. But if mesmerism is worthy of investigation, and of use in surgery, why should Dr. Packman cry out danger? and thus cast another stone in the path of those who are investigating this important subject, as if all power was not dangerous, and had not its abuses as well as its uses But Dr. Packman would keep us in the dark for fear that any one should get burnt—what absurdity is this? but the cry of danger is generally the result of ignorance. The child is frightened of a shadow, and will not examine for itself; but the wise man sees with sound brain, that all knowledge is valuable, and that the knowledge of man to man is the most important of all knowledge; and by what means shall we ascertain the nature of man, so well as by mesmerism? by what other means shall we be enabled so clearly to shew the nature of insanity—of monomania—of dreaming;—in fact the entire phenomena of mind—so that if through mesmerism we could only ascertain something of this, it would surpass in importance every other science; and, again, if by this power we could only prevent pain and its consequences, in surgical operations, what result so glorious! And, if then we can besides all this, cure the most frightful diseases, which nothing else can touch, and prevent the necessity of using violent and dangerous remedies in other cases, which too often increase the disease, or cause another;—if this can be done, and it can, then I say, in answer to Dr. Packman, let us all do something to advance our knowledge of mesmerism, and so prevent some of the fearful evils consequent on the present system, or rather want of system, in the practice of medicine; and do not turn away, either in fear or despair, because M. Lafontaine did not cure for you, some patients, which were considered to be incurable by all other means, and who were not very susceptible of the influence, but enquire what others are doing, and when we know more, perhaps, we may do more. Even the discoveries which I have now announced, in this very paper, will and have assisted greatly in the cure of those very cases to which Dr. Packman refers; and if the Doctor will take the trouble to read the *Zoist*, and other publications, devoted to mesmerism, he will there find on record a continuous stream of cases of cure by mesmerism; and to conclude, I may say that few have seen or done more in mesmerism than myself; and I do unhesitatingly declare, that I have never seen nor heard of any evil whatsoever having resulted from the use of mesmerism, but a vast amount of good in almost every possible way.

Sir, your obedient servant,
Henry Atkinson.

P.S.—Of course it is always well to be cautious, and not carry your experiments too far; and not attempt the cure of nervous disease until you have gained some knowledge upon the subject.

18, Upper Gloucester Place, London, Aug. 7, 1843.

MEDICAL NEWS.

Medical Coroners and Medical Men—The *Standard*, in giving the number and expenses of Middlesex coroners, mentions, that Mr. Wakley, during the last year, held 839 inquests, for which he got for himself, in fees, £1,118 13s. 4d., the mileage, £128 11s. 9d. The sums paid for *others* attending his inquests were only £895 5s. Mr. Baker held 868 inquests,—£1,157 6s. 8d. for himself, and to *others*, in expenses, allowed £1,393 14s. 6d. The proportions of the expenses of the other coroners (Gell and Higgs) are very similar to Mr. Baker's. We have here, then, a most important fact illustrative of some former remarks of ours. Notwithstanding Mr. Wakley's long indisposition, and his parliamentary duties, he has held, within 29, as many inquests as Mr. Baker. While his receipts, under all disadvantages, have been all he could make them—raised, we think, above the level a long way—the receipts of *medical men* under him, as witnesses, have been pared down to meet the surcharge, to almost one half less than a non-medical man, Mr. Baker, thinks they should be, and makes them. Is it wonderful, then, that *in several cases*, Mr. Wakley should register "natural deaths" where individuals have died by poison and that when detected in these *awful* errors, he should, with a daring we scarcely know how to designate, fabricate public calumnies, that *medical men* have inserted poison after death in the subjects of the inquests?

The British Medical Association held a meeting by its council on August 8th. From the minutes which have been sent to us, we learn, that the president was in the chair; that it was resolved that further questions should be put to Sir James Graham on the Charters *to be* granted and that four letters were read, received from provincial practitioners. The *meeting*, at which we are not told how many attended, then adjourned.

Mesmerism.—The papers state that a boy at Glasgow, who shewed a remarkable facility of being placed under the mesmeric influence, and, as a consequence, was constantly being operated on, was thrown into a "cataleptic trance," from which no discoverable means yet used can rouse him. The case is cited, as a warning against indiscriminate mesmerism by the unscientific and non-medical.

Glaucoma.—The pathological conditions in glaucoma were shewn, in 1830, by Dr. Mackenzie of Glasgow, to consist of a change of color of the choroid coat to a light brown, the absence of pigmentum nigrum, the vitreous humour being fluid, perfectly pellucid, colorless, or slightly yellow; no traces of the hyaloid membrane; the lens of a yellow or amber color, especially towards its centre, firm, and transparent; no trace of limbus luteus or foramen centrale in the retina. He attributes the absorption of the choroid pigment, the insensibility of the retina, and even, in part, the glaucomatous change of the lens, to the pressure of a superabundant vitreous fluid. The late Mr. Tyrrell was of opinion, that the morbid action was first set up in the retina, and thence spread to the hyaloid membrane and the lens, while a still more recent writer, Dr. Sichel, considers that inflammation of the choroid coat is the cause of glaucoma.

Retention of Urine, with Cartilaginous Stricture, and Enlarged Prostate.—An interesting case of retention of urine is narrated by Mr. Macilwain, as having occurred in the person of a man, 67 years of age, who had had symptoms of stricture for about twenty years. On examination, the obstruction was found to be situate at the membranous portion of the urethra, and the prostate considerably enlarged. The bladder was greatly distended, having risen nearly to the umbilicus, and the man had a double inguinal hernia, meeting in front of the pubes. Failing to pass a catheter, paracentesis of the bladder, through the abdominal parietes, was practised, the herniæ having been previously reduced, and the contents of the bladder were drawn off. Some relief was experienced from the operation, but the patient soon sunk. On examination of the body, the bladder (in appearance not unlike a gravid uterus) was seen to be enormously thickened, and of an exceedingly dense, firm structure; its mucous surface being thrown into large folds, resembling the carneæ columnæ of the left ventricle of the heart, and exhibiting in different parts, patches of increased vascularity. The viscus contained a quantity of highly offensive muco-purulent fluid. The prostate was enlarged to double its ordinary size, and just in front of the membranous portion of the urethra, there was a considerable thickening of the canal, of cartilaginous hardness, which had so nearly obliterated it that it would not admit a small probe. There was not any infiltration of urine. The herniæ on each side, which had existed fifteen years, were formed, that on the right by the cœcum; and on the left by the sigmoid flexure of the colon.

Treatment of Gonorrhœa by Superficial Cauterization of the Urethra.—Mr. Childs states that when a patient applies to him with gonorrhœa, he introduces an instrument, a modification of Lallemand's caustic-holder, smeared with oil, carrying it as far back in the passage as from the symptoms may be deemed expedient. The caustic being exposed by pressing the stylet forwards, the button at its extremity must be rapidly rotated between the thumb and forefinger of the right hand, in order that no part of the mucous membrane may be left intact (untouched), while the instrument is at the same time gradually withdrawn from the passage. Inflammation, and sometimes slight bleeding, generally comes on in a few hours, but proves

only temporary, and, on its subsidence, leaves the part almost free from discharge. A repetition of the caustic application is occasionally necessary. Mr. Childs administers cubebs and copaiba internally at the same time, and envelopes the penis in rags wetted with a cold saturnine lotion; being appearently determined to conquer the disease one way, if the other should fail.

CONDITION OF THE PELVIC JOINTS AFTER PARTURITION.—A middle-aged woman, who had died of flooding after delivery, was brought into the dissecting-rooms of Dr. Knox, of Edinburgh. The pelvis was of full dimensions. On examining the articulations, they were found to be all relaxed; the bones could be made to slide over one another. The obstetricians, to whom the case was shewn, considered it to be produced either by putrefaction, or by pathological causes. However, since that event, Dr. Knox has had an opportunity of examining carefully the pelves of five women of different ages, who had died soon after delivery, and having found in all of these a relaxation of the articulations of the pelvis to a greater or less extent, but always remarkable, he is inclined to look upon the process as a regular or healthy one, and not as the result of pathological action.

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of Gentlemen admitted Members on Friday, Aug. 11th, 1843:—

A. W. Gange, E. Pemberton, W. Clegg, F. Smith, D. Corbett, R. Oxley, J. H. Wise, G. Buckell, J. Hunt, J. Skelton.

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Age.	Annual Premiums payable during: 1st Five Years.			2d Five Years.			3d Five Years.			4th Five Years.			Remainder of Life.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
20	1	1	4	1	5	10	1	10	11	1	16	9	2	3	8
30	1	0	4	1	12	2	1	19	1	2	7	4	2	17	6
40	1	16	1	2	4	4	2	14	6	3	7	3	4	3	4
50	2	16	7	3	9	4	4	5	5	5	6	3	0	13	7

Detailed Prospectuses, and every requisite information as to the mode of effecting Assurances, may be obtained at the Office.

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Reform the State, with voice elate, let politicians shout;
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But, oh! above all things, cry we, REFORM YOUR TAILORS' BILLS!;

Perhaps you say, in sore dismay, "How can the thing be done?"
Whereat we cry, most easily, with DOUDNEY AND SON,
Of LOMBARD STREET, at FORTY-NINE, the number 's on the door;
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Your person in a perfect Suit they'll prominently fix,
In such as all who see admire, for Three Pounds Twelve and Six.
Good Work, Good Cloth, Good Quality, and Patterns all the go,
And Morning Coats, the price Fifteen—the charge, you'll own, is low.

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For Two Pounds Ten, your Suit complete, including Leather Gaiter
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Age	First Year.			Second Year.			Third Year.			Fourth Year.			Fifth Year.			Remaind. of Life.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
20	0	18	2	0	19	2	1	0	3	1	1	5	1	2	8	1	18	2
30	1	3	9	1	5	2	1	6	8	1	8	4	1	10	0	2	10	5
40	1	11	10	1	13	9	1	15	10	1	18	1	2	0	6	3	8	3
50	2	4	9	2	7	11	2	11	2	2	14	10	2	18	8	4	17	7

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AUG. 5th, 1843. EDMUND BELFOUR, Sec.

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Packed ready for the country in 3, 6, and 12 doz. baskets. Sold only by Grignon, 174, Regent-street, opposite Burlington-street: Barker, corner of Sloane-street, Knightsbridge, and 77, Edgware-road; White, 8, Haymarket; Sainsbury, 177, and Gifford & Linder, 114, Strand; White, 24, Cornhill; Giddy, 7, St. James-street; and Robinson, 164, Piccadilly.

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In the treatment and cure of wounds the following plain directions are requisite.

1st.—The ruptured parts should be in close contact with each other, and retained in their natural position as far as practicable by means of soft pliable bandages, using such compression as may be required for that purpose without impeding the circulation.

2nd.—An equable temperature corresponding with the heat of the body should be preserved. At a temperature much below the heat of the body the process of healing is completely suspended, and to counteract this evil, if the parts be left exposed or protected only by a slight covering which admits the free access of air, nature supplies the principle of heat in the oxygen of the atmosphere and inflammation ensues. To guard against inflammation on the one hand, and cold or a lower temperature than the body on the other, the natural heat of the system should be retained by shielding the wound and its surrounding parts from the action of the atmosphere.

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The PATENT LINT is enclosed in printed envelopes particularly describing the mode in which Burns and Scalds may be effectually cured by means of its application. The frequency with which these painful accidents occur, strongly recommend it to the heads of families.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs

No. 205. Vol. VIII. LONDON, SATURDAY, AUGUST 26, 1843. PRICE FOURPENCE. Stamped Edition 5d.

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SUMMARY.

BRITISH ASSOCIATION. — MEDICAL SECTION.

FIRST MEETING.

(*From our own Reporter.*)

Cork, Thursday, Aug. 17th, 1843.

This Section met to-day at 11 o'clock, in the Lecture-room of the College-buildings, Warren's-place.—Sir James Pitcairn, M.D., President.—The attendance was rather thin, there not being more than a dozen of the "Faculty" present during the proceedings. The vice-chair was occupied by Dr. Popham, Dr. Sargent acting as secretary. Amongst the medical gentlemen present were, Professors Houston and Harriss; Dr. Bevan, Guy's, London; Drs. Bull; Howe; Oliffe (Paris); Finn; Duncan; F. C. B. Tanner; Perry; Wheland; and O'Leary. The business of the day commenced with reading minutes of the proceedings of the Section at their meeting in 1842. After which a coloured cast (done in *papier mache*) of a diseased liver was exhibited by Dr. Oliffe, who stated that the original was that of a naval officer, age 45, who had travelled much in India, and enjoyed excellent health, saving that he was subjected to attacks of *nausea* when getting out of bed in the morning, which, eventually, was followed by loss of appetite and general debility of the system, though unaccompanied by cough or pain. After death, the liver was found, on incision, to contain a large quantity of *pus*, as, also, did the mucous membrane and gall-bladder. Having briefly commented on the state of the other viscera, the learned gentleman concluded by presenting the model for exhibition during the sitting of the Association, which was received with much and general satisfaction.

The president then called on Professor Houston, who advanced to the table and read the following paper:—

ON THE MEANS ADOPTED BY NATURE, IN THE SUPPRESSION OF HÆMORRHAGE FROM LARGE ARTERIES.

Simon White, aged 33, was admitted into the City of Dublin Hospital, on account of an accident, by which the right, upper extremity, was torn from his body at a point corresponding to the insertion of the deltoid muscle. The arm being caught in the revolving strap of a corn-mill, he was lifted by it from the ground, and the arm, which happened to be stripped at the time, severed from the body, and thrown along with himself into a heap of oats at a little distance. He lay for a short time insensible, but soon got up again, and descended three flights of ladders without knowing, as he averred, that he had lost his arm, so sudden was the injury, and so unconscious was he of the act of dismemberment. He then became weak and sick, and was conveyed in about half-an-hour to the hospital, where I saw him immediately on his arrival. His pulse was, then, small and irregular: he looked pale and frightened, and complained of a load at his heart; but was otherwise so little unwell, that he proposed to walk up stairs to the ward without assistance. When laid in bed, he was seized with a fit of trembling, although without any sensible diminution of the natural heat of the body. His breathing was a little hurried, but as his friends stated at the time that he had a bad chest, this sympton was not regarded. The surface of the stump, when stripped of the rude dressing that had been laid over it in the hurry, presented a coating of coagulated blood and oats, the latter of which was firmly impacted in the flesh. It was extremely irregular; some of the nerves, the median in particular, hung out loose for many inches, having been pulled up by their branches from the fore-arm, others having been torn out by the roots from the plexus. The lesion of the muscles and skin on the outside of the arm was straight, as if it had been made by a knife—the result, perhaps, of the pressure of the strap on them before the yielding of the bone: whilst on the inside the muscles, like the nerves, were irregular, and the skin torn for some distance from the side, obviously by the force of laceration. There was no discharge of blood from any part of the wound, except a little oozing from a few scattered muscular vessels. The extremity of the brachial artery was not exposed to view, being less prominent than many of the other textures, and concealed by some coagulated blood which lay entangled among the lacerated parts—the traces, no doubt, of the gush which must have taken place on the instant of the solution of continuity of so many vessels. It being an object to secure the main artery against bleeding, during the interval which it might be necessary to allow to elapse before attempting amputation of the shattered stump, a search was made for that vessel with a view of applying a ligature on it. When liberated from the torn sheath, to which its adhesion was so trifling as to admit of separation without the aid of a cutting instrument, the artery appeared dark-coloured, smooth, and tumefied, the very extremity being the largest part. When pressed between the finger and thumb, it felt soft and elastic, as if tensely filled with half fluid, half coagulated blood, and was distended and jerked by pulsations synchronous with those of the heart; but, nevertheless, not a drop of blood either issued or could be squeezed out of its truncated extremity. In this state it was seen and felt by several persons, who regarded its condition of security against bleeding as very remarkable. A ligature was then placed on the vessel, about an inch above its torn extremity. Cold lotions applied, and a little wine administered, amputation at the shoulder joint was next day performed, and the patient in due time recovered perfectly: but as I have, here, only to do with the condition of the artery in which the hæmorrhage was so effectually arrested, I shall pass by all other matters, and describe the appearances which it exhibited after removal from the body. The extremity of the outer, or cellular coat of the vessel, was drawn at the point of its laceration over the mouth of the divided inner and middle coats (in the manner that a purse is closed by its string), and distended with a clot of blood entangled and intimately united with the fine meshes of the torn cellular tissue, on its inner surface. The inner coats of the artery were drawn within the outer one, if it may be so expressed, for at least half an inch—the tube diminished in calibre, and thrown into transverse wrinkles, but not lacerated at any point except that where it had been torn through, and the canal occupied by a coagulum. Outside the mouth of these tunics, there lay a small portion of pure coagulated blood, like that in their cavity, but the remainder of the proportion in front, consisted of the texture above described, viz.,—a mixture of blood and cellular tissue, which offered a complete barrier to further hæmorrhage. This grumous material was even traceable for a short way up between the tunics, assisting by its pressure there, from without, to diminish the calibre of the vessel, and contributing also to that increase of its bulk observed in the first instance, before the parts had been interfered with by dissection. A vertical section of the artery exhibits all these circumstances very clearly.

The results of experiments on the blood vessels of lower animals, are found to be fallacious guides as applied to the process of nature, in arresting hæmorrhages in the human body;—fallacious, on account of the differences in the tissues of their blood vessels, the coagulability of their blood, their powers of reparation and their constitutional temperaments. From the examination into the former, an approximation may be made to a knowledge of the principles of the vital phenomena in these matters; the details, the practical knowledge, can only be learned by personal inspection of the latter.

It is to be presumed, that almost all that can be done by experiments, on the living animals, has been accomplished, and we must now look to the opportunities which may arise out of the frailties and incidents to which man himself may become the victim, for extension of our experience on this interesting branch of surgery. That our knowledge of the subject is still vague and uncertain every one must feel; and as fully expressive of this fact, and also, as giving the only advice which we can follow at present regarding the matter, I shall quote from one of the ablest and best writers on the subject, Janson, who says, "as none of the hypotheses hitherto published, account satisfactorily for the facts connected with the spontaneous stoppage of hæmorrhage from wounded vessels, we must be content, for the present, with registering them as they occur, and waiting farther and more complete observations." The case before us affords a satisfactory instance of the arrest of the hæmorrhage in a lacerated artery, by the agency of the external tunic alone. Such is conjectured to be what occurs in arteries which do not bleed when torn across, but I am not acquainted with any description, much less any specimen from the life in man, placing the matter so clearly beyond a doubt. When stretched beyond its powers of resistance, the artery gave way. The inelastic, internal and middle coats first yielded by a simple transverse fissure. There was no irregular breakage here, such as some suppose to attend on such an injury, and to be capable by its roughness of attracting the blood and inducing it to coagulate in the artery: on the contrary, the leison was single. The external cellular coat, in virtue of its extensibility, yielded so as to allow itself to be stretched, nearly, perhaps, to the extent of an inch, thereby permitting itself to be drawn into a tube narrowing like an hour glass in the centre, in a manner that might, at the moment of its giving way, be imagined to have resembled a double cone, like an hour glass, with the apices touching each other, and the bases at the remote, lacerated extremities of the deeper coats. In the actual rupture, the stretched and torn filaments of the fine cellular tunic, drawn to a point and matted together, fill over the mouth of the vessel, smoothly and continuously, and without any aperture for the escape of the blood. The gush which would otherwise, on the instant, have taken place, was thereby arrested, filling the hooded bag in front, and producing that bluish enlargement of the end of the vessel so strikingly remarkable when first seen. This bag, by its softness, was then known to contain blood in a fluid state, and by its swelling and pulsating with every stroke of the heart, gave evidence of being still in direct communication with the interior of the artery.

The stoppage of the hæmorrhage was, here, perfectly mechanical. I have little doubt also that it was instantaneous, being one of the

consequences of the act of lesion in the vessel itself, independently altogether of its sheath or other surrounding textures, all of which admitted of being removed from about it, without diminishing the disposition and capacity of the vessel to prevent the escape of the blood; as even when so disembarrassed from them, it admitted of being squeezed and pulled and turned in every direction, without giving issue to a single drop of that fluid. The only difficulty towards a belief in the instantaneous arrest of the hæmorrhage, (and it is one urged generally against this theory) is that conveyed in the question—where did the blood lost by the man, come from? If the artery was hermetically sealed on the instant, why any hæmorrhage at all? I think that in this case, at least, there was no bleeding from this vessel. The emptying of the veins and arteries of the lower part of the limb, together with some blood which must have flowed from the veins and smaller vessels of the stump, was sufficient to account for the quantity spilt; and I think that the vigorous state of the man which enabled him, almost immediately after the accident, to walk down three ladders unassisted; the strength of his pulse; the heat of his body; and the character of the tremor which he laboured under, being more that of fright than loss of blood, all shew that the quantity lost must have been so inconsiderable that the main artery of the limb can scarcely have been concerned in its production. Cases like that of Samuel Wood, and others may, however, be adduced in evidence that serious hæmorrhage can follow the tearing away of a membrane, notwithstanding, as may be supposed, that a state of the principal artery, like that just described, has been induced; but all cases of the same accident need not be alike as regards this lesion. For example, if the laceration occurred at a point where a large artery was given off, the act of stopping the open mouth by a process of this nature might be but imperfectly accomplished. Or, if the vessel were firmly bound to any neighbouring resisting object, the same unfavourable result might equally be expected. The state of health or of disease of the vessel would also influence the result very materially. Different arteries even are differently circumstanced as to structure, in a manner seriously to affect the consequences of such accidents. The external coat is more fully cellular, or reticulated on the outside of some than others, and I think there is in the axillary and brachial arteries in particular, a laxity in tissue of the surface of the outer coat, a freedom from intimate connection to any close adhering fibrous sheath, which disposes them more than most other vessels of equal magnitude, to have their mouths sealed up in this manner when torn across by violence. A comparison in this respect between the axillary or brachial arteries, and the iliacs or femoral, both as regards their anatomical bearings, and the effects of such injuries on them, will fully bear out this observation. The former, which, from the nature of their cellular envelops, roll about safely and easily in their beds, afford many instances of spontaneous cures after laceration; whilst the latter, being comparatively fixed and rigid, and enveloped closely by dense fibrous sheaths, to which they are connected by a short fine cellular tissue, have, when lacerated, so little means of separation from this source, as almost necessarily to remain open, and to have such facility for fatal hæmorrhage, as to leave but few instances of recovery for record in the annals of surgery.

It may be added that this theory of the spontaneous cessation of hæmorrhage from lacerated arteries, is both rational and intelligible; for when we take into account the very moderate amount of resistance which is capable of stopping the flow of blood from a divided artery, as ascertained by Mr. Guthrie, and others, we may readily conceive that even a trifling mechanical obstruction of the nature produced in this accident, and applied so directly over the mouth of the vessel, would be quite sufficient for the purpose. Almost every second case must here, as in diseases generally, have sometning new. The laws regarding them may be fixed, but the varieties are innumerable. Some may bleed much, others only a little, and others again, under the same kind of lesion, not at all. But in all such, the same laws must more or less be in operation in remedying similar lesions; and the case which I have here detailed may, I think, be regarded as proving what has been hitherto more a conjecture than matter of certainty, at least as regards the human body; namely, that the external tunic is capable of itself, without retraction or contraction of the whole artery, and without even a coagulation of the blood, (phenomena usually considered essential to the success of the process) of arresting, on the instant, and both effectually and permanently, the escape of blood from an artery divided by laceration. The preparation and the drawing shew, in the clearest manner, the flimsy veil which lay interposed between this man and the grave.

At the close, no discussion took place; and there being no other papers ready at the time,

The President adjourned the meeting to 11 o'clock the following day. (Friday)

SECOND DAY.

At the hour of meeting, this day, the attendance was much larger than on the preceding one. In addition to the gentlemen present yesterday, we noticed Dr. Woodrooffe, Dublin; Dr. Cronin, Cove; Dr. Hobart, Dr. Croker, and Dr. Pickles, Cork.—The chair was taken by Sir James Pitcairn; Dr. Popham filling the vice-chair.

At the desire of the chairman, Professor Harrison proceeded to read his paper on the cure of aneurism by pressure. He remarked that the paper about to be read, was not so much a scientific one, as a plain narration of a practical case which came under his own observation. The subject was one that had engaged considerable attention of late; and within a very few years, no less than four cases of aneurism had been successfully treated by pressure, in Dublin. The system of pressure was not a novelty—it was merely a revival of an ancient mode of practicing. And though it had been found not to succeed in many instances, at former periods, yet he doubted not that the failure was attributable to a want of knowledge on the part of the practitioners, for it was an object with some of them to apply too much pressure for the purpose of keeping the sides of the vessel in a state of contact: but, of late, it had been found that slight pressure was much better, for it allowed the blood to accumulate and coagulate in the sac. He then continued:—Robert Hoy, an operative, was admitted into hospital, having a small tumour in the left popliteal space, which was pronounced, on examination, to be an aneurism. An instrument invented by Mr. Millikin, cutler, was applied immediately above the seat of the disease, which compressed the artery without at all interrupting the collateral circulation: it had, however, to be removed after about an hour, in consequence of the pain suffered by the patient. After sundry applications, there appeared an evident decrease in the size of the tumour, and the pulsation also became less perceptible; but the man suffered much from debility and want of rest, never being able to sleep while the instrument was on. In a short time, a large tumour appeared at the side of the knee, which distressed him very much, as it had direct communication with the aneurismal sac. Another instrument, called a tourniquet, used for the purpose of compressing the femoral artery at the groin, when amputation is to be performed far up the limb, was then applied. This was worn by him for about a week, relieving himself by unscrewing the instrument every quarter of an hour, and then applying the pressure again: during this time he suffered an immensity. The death of a relative having been made known to him, he determined on leaving the hospital, and accordingly did so, taking with him at the same time, an instrument invented by himself, resembling much a carpenter's clamp, having got directions how to use it, and being warned of the necessity always to compress the vessel below the tumour previous to removing the pressure above, so as to prevent the too rapid current of blood through the sac. By observing closely this line of treatment, the tumour decreased, and no pain resulted from the pressure; and, continued the learned professor, when last I saw him, a few days ago, I found him walking about his house, apparently, as well as ever; however, I cautioned him not to make too free, or indulge in any severe exercise, for a long time. Dr. Harrison then exhibited the instruments used, and explained their use and application to the meeting, who listened to him throughout with marked attention; and at the close, Dr. Oliffe complimented the learned doctor (Harrison) on the production of his paper, on so interesting a subject, and mentioned a mode of pressure on arteries, which was revived with great success, by M. Amussat, of Paris, which consisted of grasping the artery with a tortion-forceps, and keeping it compressed for a few minutes, causing its obliteration.

Dr. Woodroffe said he had an opportunity of seeing the case related by his learned friend, Dr. Harrison, which was the more remarkable as the man was of a most quick and excitable temperament, the slightest circumstance accelerating the circulation and producing pulsation in the tumour.

Dr. Houston enquired what pathological changes took place in the sac by the cure with pressure?

Dr. Harrison was not exactly prepared to say, not having had an opportunity of ascertaining, as all the cases terminated favourably; but he was of opinion that it was owing to the contractility of the parietes of the sac, which increased in the inverse ratio of the distending force, and the blood not being allowed to flow in a continued current through the tumour, a coagulum was formed.

Dr. Bevan also complimented Dr. Harrison, and begged to suggest that it might be useful to try the effect of a stream of galvanic electricity passed through the sac during the pressure on the vessel. He stated that it was his intention to try it, on the first opportunity.

Dr. Pickles read a lengthy paper on the fatal effects resulting from the partaking of the "enanthe crocata," commonly called the water parsnip, The learned gentleman adduced a large number of cases, where persons who had incautiously partaken of it felt its fatal effects, and instanced a particular case where melted butter had proved a most successful antidote.

Dr. Houston exhibited a new and most ingeniously contrived instrument, for the extraction of calculus from the bladder. He stated it to be the invention of a Mr. M'Lean, a surgeon and dentist of Dublin. The profession seemed to regard it as a discovery of great importance.

The President regretted that it had not been discovered at an earlier period, as he witnessed a case in 1796, of a boy who had a calculus of the shape of a penny-piece, in the bladder, and who was an hour and a half under operation. If such an instrument as the present had then existed, Sir Everard Home, the operating surgeon in this case, would not have lost a quarter of that time.

A letter was then read by Dr. Sargent from Dr. Brooke, of London, enclosing an instrument constructed for the purpose of ascertaining the presence of small calculi in the bladder: it was accompanied by an oval sound board six inches in diameter, and 1-8th of an inch in thickness, but unfortunately, in their transmission, they were broken, and some parts lost. After their use had been explained at some length:

The President adjourned the Section to the following Monday.

Laryngeal Polypus.—A servant girl, 28 years of age, labored under difficulty of breathing, weakness of the voice, and dry cough. These symptoms gradually increased in severity, and the dyspnœa at intervals became so great that she feared for her life. On examination, the parts about the neck, throat, and chest appeared to be natural. Tracheotomy was proposed, and rejected. Three days after she died asphyxiated. On examination of the larynx from behind, a pyriform tumour, the size of a filbert, was found growing by a pedicle from the right corda vocalis, near its union with that of the opposite side. The polypus was whitish and nodulated; the larynx was perfectly healthy in other respects.

ON THE EFFECT ON VEGETABLES OF PRODUCTIONS KNOWN AS POISONOUS TO ANIMALS.

By M. BOUCHARDAT,

The following arsenical preparations, viz., *arsenic* and *arsenious acids, arseniates of potash and soda*, in solutions containing but a thousandth part, destroy vegetable life. Leeches and fish experience the poisonous action of these solutions. In a solution containing a thousandth part of arsenic acid, fish perished in three-quarters of an hour; they lived twelve hours in a solution of arsenious acid; twenty-four in one of arseniate of potash; and a small fish lived six days in one containing a thousandth part of arseniate of soda. The numberless points of analogy that exist between arsenical and *antimonial preparations* are still further exemplified by the following facts:—The influence of tartar-emetic upon plants, fish, and annelida, has a great resemblance to that of arsenical preparations. The action of this salt upon fish is much less energetic than that of arsenic acid, but it is more rapid and powerful, in equal quantities, than that of arsenious acid, and of course much more so than that of arseniate of soda.—*Preparations of Mercury* in solution have, I think, offered results well worthy to command our attention; they should be classed as *general* poisons; no plant or animal of those on which we have experimented, has ever resisted their influence. The solution of a thousandth part of bichloride of mercury rapidly destroys the life of plants. Leeches and fish plunged into it, were instautly affected, and perished in a few minutes.

The injurious action of mercurial salts is, when the smallness of the quantity used is considered, truly prodigious. I will give an example:—A thousandth part of a gramme of ioduret of mercury, was dissolved in a thousand grammes of water, with the assistance of one thousandth part of a gramme of ioduret of potassium. Four small fish —the *cyprinus lobula*, the *cyprinus gabio*, and two *cyprini amari*—were plunged into the solution. At the expiration of three quarters of an hour, they were all evidently affected: two of them died at the end of two hours; the other two lived more than four hours, but they were made completely powerless; they rose nearly motionless, their heads uppermost, to the surface of the water, and died in the evening.

The proportion of mercurial salt is so small (a millionth), that its presence cannot be detected, and the quantity absorbed by the fish is inappreciable in weight. Its effects become more remarkable when compared with those of arsenic. A fish has been known to live six days in water containing, in a *litre* of water (about one pint), one gramme of arseniate of soda, and the same animals have expired in a few hours under the influence of a solution containing to the *litre*, a thousandth part of a gramme of biniodide of mercury. It follows, then, that the biniodide of mercury is to fish, one thousand times at least more poisonous, than arseniate of soda.

I have made experiments, to compare the injurious action of various soluble preparations of mercury: these are the results. The biniodide of mercury, liquified by ioduret of potassium, is incomparably more energetic than the same quantity of bi-chloride; the cyanuret of mercury has a less poisonous action than the bi-chloride.

The nitrate of silver is a very powerful poison upon plants, fishes, and annelida. If we compare the action of the nitrate of silver to that of the bi-chloride, or the biniodide of mercury, we find that in a dose of the thousandth part, the nitrate of silver acts with more rapidity and strength—but, in a dose of a 100,000th part, the bi-chloride, and, above all, the biniodide, is more promptly and energetically poisonous. The chlorurets of gold, and the chloruret of platinum, act also with much strength upon plants, leeches, and fishes; but their action is much less prompt than that of either the bi-chloride of mercury or the nitrate of silver.

The chloruret of platinum is more slowly fatal than that of gold.

Every known fact, and all the experiments I have had, tend to shew that the *soluble salts of copper* are, as general poisons, less energetic than the salts of mercury and silver, though, like them, when administered in sufficient quantity, they are fatal to all organised beings.

I have studied with the greatest care the action of the most important *neutral salts* upon plants, fishes and leeches. I have thus been enabled to class them, according to the energy of their physiological action. These are the results of my observation:—The sulphates of soda and of magnesia are remarkably similar in their action. The harmlessness of the solutions of these salts upon fish is very remarkable. Let it suffice to say, that these animals have been known to live forty-eight hours in a solution containing a twentieth part of one or other of these salts. This result will appear very remarkable, if we consider the nauseous taste and density of such preparations, which are much more heavily charged than Seidlitz water. If the dose of these salts be carried up to a *tenth*, fish die in four hours. Weak solutions of sulphates of soda and magnesia exercise an injurious influence upon plants, after some time; but this originates in the fact, that the plant is incessantly absorbing the solution, while the water, evaporating the salt, gets into a state of concentration, when its injurious action can, of course, make itself felt.

The sulphate of potash differs very much, on account of its activity, from the sulphates of soda and magnesia. Fish perish quickly in solutions which contain but a hundredth part. Plants are also more speedily affected by solutions of this salt, than by solutions of sulphate of soda and magnesia. This fact would appear to give a great likelihood to the cases of poisoning by this salt, which have been lately much talked about. Fresh water fish live in a solution containing a hundredth part of marine salt, but they perish very quickly in one containing a fiftieth.

The chloride of Barium is a poison that acts very powerfully upon animals of the first class, but not so upon plants and fishes: it appears to me certain that it is more injurious to vegetable life than the salts of soda and magnesia; but it is infinitely less so than the soluble salts of lead, with which it has been classed by all preceding experimentalists. Fish live very readily in a solution of a thousandth part of chloride of barium, though they perish in twenty-four hours in a solution containing a hundredth part of this salt.

It is known that the chloride of calcium is infinitely less dangerous to superior animals than the chloride of barium; but with fish, the contrary is the fact: upon plants, the action of these salts is nearly similar. Fish perish after remaining twenty-two hours in a solution, containing only a thousandth part of chloride of calcium.

The ioduret of potassium, and the prussiate of potash, are two salts which, although differing very much from the preceding in their chemical constitution, resemble them very closely in their action upon fish: these animals live in a solution containing a thousandth part of ioduret of potassium, or of prussiate of potash; but if plunged into solutions containing a hundredth part, they rarely hold out more than twenty-four hours. —The ioduret of potassium and the prussiate of potash are much more injurious to plants than the preceding salts, but their action is so perfectly similar that they may at once be classed together. *Acids*, greatly diluted, present to our observation, results at once new and unexpected. All soluble acids have, as it were, an analogous action; but the most remarkable of all is hydrochloric acid. Solutions containing scarcely a thousandth part of this acid, act upon plants with the greatest energy, and in a very extraordinary manner. It is not by the direct action of the acid that the plants die, but by a dissolution of the *spongiolæ*, and a complete interruption of absorption. The higher parts of the plants begin to fade, whilst the branches steeped in the liquid, preserved by the bark, continue in all their freshness. Fish plunged in water containing only a five-hundredth part of hydrochloric acid, scarcely affording an acid reaction, are greatly affected; in ten minutes, their movements are irregular, and they die at the end of three quarters of an hour. An anatomical examination of their gills has presented very remarkable alterations; they are no longer brightly red, but pale and soft: examined by the microscope, they appear to be transformed into a pultaceous mass.

The poisonous action of diluted hydrochloric acid, so remarkable upon plants and fish, can be satisfactorily accounted for: in fact, life is extinguished in fish and plants, because the spongiolæ and branchiæ, not being protected by an epidermis or mucus, are dissolved by the liquid in the same way as cellular or muscular tissue;—the organ being destroyed, the most important function is interrupted, and the plant or animal dies. The proportion of acid can be still further reduced, and the poisonous action of the liquid is still observable. Fish die at the end of six or eight hours, in solutions containing no more than two 10,000th parts of hydrochloric acid; the gills are still pale and discoloured; their superficial cells are destroyed, and become converted into an albuminous layer. Nothing that had been hitherto observed, tended to make known that so small a quantity of hydrochloric acid, would have had so considerable an influence upon plants and animals possessing a branchial apparatus. We are readily astonished at so strong an analogy between beings so different—an analogy, to which new and valuable facts will soon give additional importance.

I have before announced that elaborate experiments bear out the fact, that the sulphuric, nitric, phosphoric, oxalic, tartaric, citric, acetic, and formic acids, exercise an action analogous to that of hydrochloric acid; but the quantity used must be greater.

Vegetables plunged by the root into water containing scarcely a thousandth part of essence of mustard, perish in twenty-four hours. Leeches are instantaneously affected by it, and die at the end of twenty-five minutes. Fish plunged into this solution are, as it were, "*thunderstruck*:" they are equally affected, and perish in six hours, in a liquid containing only a 20,000th part of this essence

The essence of bitter almonds, deprived of hydrocyanic acid, acts, if anything, with increased energy, both on plants and fish. Fish placed in a solution containing a 10,000th part, become irregular in their motions, in seven minutes, and perish in an hour. This essence, deprived of hydrocyanic acid, undoubtedly acts with more force upon plants and fish than the acid itself. *Essential oil of aniseed* must be placed in the first class, on account of the rapidity of its action: two drops, in a *litre* of water, will kill a great quantity of fish. The same thing may be said of the essences of cajeput, valerian, canella, orange flowers, and cloves. The quantity of each, sufficient to poison plants and fish, is inappreciable. The *essences of turpentine, of copaiba, and of citron*, although extremely active, are less so than the preceding. Pepper-mint is killed, like other vegetables, by the essence of mint. *Camphor* acts upon plants and fish altogether like essential oils—with this distinction, that its poisonous energy is three or four times less powerful. *Creosote* is very similar to essences in its action upon plants and fish; it is more active than the essences of turpentine or citron, but less than that of aniseed. Fish are immediately affected in a solution containing a thousandth part; they perish in six hours, in a solution containing a ten-thousandth.

Alcohol and *ethers* ought to be classed amongst the number of substances that poison plants and fish, but their action is less energetic than that of essential oils.

Fish live in water containing five parts of alcohol for one thousand of water; but they perish when the proportion is raised to 7.50 in the thousand. Sulphuric ether kills them pretty quickly in a dose of five in one thousand: acetic ether is much more energetic; it poisons them at once in a dose of a thousandth part.

Of all vegetable alkalies, *strychnine* deserves to be ranked in the first class, as well from its poisonous action upon animals, as upon plants. A solution of a two-hundredth part of hydrochlorate of strychnine has killed plants in the space of five days. I have sought for strychnine in the parts of the stem above the water, and have found no trace of it. Fish plunged in a solution containing four ten-millionths of hydrochlorate of strychnine, are

instantaneously affected, and in ten minutes give no sign of life.

The observations of M. Magendie and M. Andral, shew that *brucine* exerts a weaker action upon superior animals than strychnine; it ought evidently to be placed in the second rank, before veratrine, morphine, &c. The writers who have treated of the action of *morphine*, or *opium*, upon vegetables, are far from being unanimous. I have made many experiments with these poisons upon the sensitive and other plants; they establish the fact, that all that has been said concerning the analogy between the influence of these narcotics upon superior animals and upon plants, is imaginary. Nothing authorizes us to acknowledge as true, the pretended sleep of the sensitive plant. If the mobility of the plant diminishes, that is most undoubtedly owing to the plant's being in a state of suffering; it is certain that the soluble salts of morphine, acting upon the root, destroy the life of the spongiolæ, and thus stop the process of absorption: this is the only way to explain the injurious action of morphine, for I have never been able to discover in the parts above water any trace of morphine. Morphine acts upon fish with much less activity than strychnine, brucine, or veratrine. Fish have lived three days in a solution containing a thousandth part of morphine.

A fact which appears to me remarkable—and, indeed, at first sight, paradoxical—is, that in equal weights, the extract of opium acts with infinitely more energy upon fish than the chlorate of morphine. Fish perish in an hour in a solution containing but a thousandth part of extract of opium, and die at the end of three days in a solution of a ten-thousandth. It is not the narcotine which is the cause of this difference, for this organic base, combined with hydrochloric acid in the proportion of a thousandth part, has not appeared to us to have an injurious action upon plants and fish.

Fish placed in a solution containing a thousandth part of *sulphate of quinine*, are soon affected, and become irregular in their motions; they die in four or six hours: in a solution containing four ten-thousandth parts, they hold out thirty-six hours. Leeches live in a solution containing a thousandth part of sulphate of quinine; but die in twenty-four hours, in one containing two thousandths. I have been curious to compare the action of salicine with that of sulphate of quinine: experience has shewn me that salicine exerts but a very weak influence on plants and fish. Fish lived several days, in a solution containing a hundredth part.

The active principles known to exist in the aconite, colchicum, stavesacre, veratrum, sabadilla, &c, exert upon plants and fish a very analogous action. All these principles should be classed amongst moderately energetic, general poisons.

The labours of M. Flourens have brought to light the active principle of the poisonous *solaneæ* upon superior animals. The influence of these agents upon plants has been singularly exaggerated; my experience has shewn me that the extract of the poisonous solaneæ has an action at once slow and weak upon both fish and vegetables: the same holds good with the extract of hemlock. I have tried the action upon vegetables of several inert or nearly inactive substances, such as *sugar, glucose, lactine, mannite, gum, albumen, extracts of gentian, dandelion, &c.* In a dose of a one-thousandth part, these substances produce no apparently injurious effect, when absorbed by the roots of plants. When the proportion of the dissolved substances is increased, and carried up successively to a five-hundredth, a one-hundredth, a fiftieth, a twentieth, and a tenth part, the deleterious action increases in the ratio of the weight of the solution.

All these substances act slowly. Plants hold out for entire months in moderately concentrated solutions, but invariably thrive better in pure water.

The facts we have elucidated in connexion with fish, are completely analogous with those we have just announced: these animals live in solutions of a twenty-fifth part, whether of sugar, glucose, gum, or mannite, but they evidently suffer, and die at the expiration of two or three days, in a solution containing a tenth. The solution of gum, in spite of its great viscidity, is perhaps the most innocent.

[For this important *resumé* of M. Bouchardat's industrious and very cleverly-conducted researches, we are indebted to a recent number of the *Gazette Medicale*. We have put the paper in an English dress, in the hope that it may stimulate medical men on this side of the Channel to a *little* more cultivation of the vast and almost unexplored field of experimental research.—Ed.]

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE X.

Suffocation takes place by compression and not by constriction; asphyxia by suffocation is less speedy in its operation than asphyxia by strangulation. The agony is long and painful, but its mechanism is easy of explanation. The air which distends the lungs, forms for the instant an equilibrium to the weight compressing the thorax externally. But this equilibrium is destroyed at the first expiration, and the capacity of the lung is proportionately diminished; the external pressure thus combines with the deficiency of inspiration to prevent the lung regaining the volume which it originally possessed. Each succeeding expiration is attended by a still further loss. For the expiration gives up more air than is restored by inspiration. The respiration thus becomes painful and defective. Now the whole economy is disturbed as soon as this elaborating organ of the vital breath is affected. The blood no longer conveys to the organs their proper degree of nutrition; while the organs, in their turn, are rendered unfit for the performance of their functions. The lungs are more and more deprived of respirable air, which is replaced by so much vitiated air; until lastly, the moment arrives which terminates this dreadful agony,—the moment in which the last atom of oxygen is absorbed by the pulmonary vesicle; the patient expires, but is unable to accomplish another aspiration.

As with every other kind of asphyxia, death by suffocation may take place in a longer or shorter space of time, according to the energy or activity of the cause. The use of tight stays by which, according to the fashion of the age, the figure is contracted at the expense of the health, must be regarded as a cause of chronic or lingering asphyxia; for the stays, day by day, contract or lessen the pulmonary capacity, and proportionately diminish the quantity of air, which the respiratory surface requires for its elaboration. This constitutes a progressive deprivation, which shortens life and leads to a gradual destruction, even where it does not mechanically produce accidents of a still more palpable character: as hernia, abortion, difficult labour, head-ache, cerebral congestion, disease of the heart and of the chest, &c.; in fine, all those internal lesions which may arise from violent reaction in the viscera, forcibly compressed into a cavity too narrow for them.

4. *Spasmodic asphyxia.*—Spasmodic asphyxia is dependant on some disorder seated in the respiratory apparatus itself. It is, so to speak, a spontaneous species of asphyxia, in which the muscles, which concur to the alternate action of inspiration and of expiration, lose the regularity and harmony of their antagonism, and are condemned, by a paralytic condition of variable duration, to a state of contraction or of relaxation, from which results the inactivity of the respiratory function. Spasmodic asphyxia may take place by any of the different modes which have been previously described: by occlusion, by strangulation, and by suffocation.

1º. *By occlusion.*—When the paralysis is principally seated in the glottis, in the epiglottis, or in their motor apparatus: the larynx will remain open, if the glottis be seized with paralysis, while in a state of dilatation, and if the epiglottis be at the time raised; liquids, passing in a wrong direction, will now produce asphyxia, by the introduction of a foreign substance into the air-tubes. If the paralysis attack the glottis, while in a state of contraction, and when the epiglottis is depressed, the larynx being closed by this valve, which is thus violently contracted, inspiration becomes impossible; and asphyxia takes place by occlusion, unless a new opening be formed by art, for the passage of the external air. Paralysis of the glottis and epiglottis may arise from the chemical action of a substance introduced into the mouth, whether upon the glottis itself, or upon its motor muscles. It may also arise from the introduction, into the pharynx, of a foreign body which, becoming arrested in the passage, and compressing violently all the surrounding tissues, causes inflammation by its presence, and paralysis results from the progress of the inflammation, as well as from the violent pressure, which this foreign body exercises upon the adjacent nervous filaments.

2º. *By strangulation.*—When the tetanic contraction of the muscles of the neck, in consequence of the augmentation of their volume in a transverse direction, is so great that the diameter of the larynx or of the trachea no longer allows passage to the quantity of air necessary for respiration; or else when the foreign body introduced into the pharynx or œsophagus, by the tumefaction and progressive compression which it determines, causes the approximation of the sides of the trachea or of the larynx; or, lastly, when this effect of compression is the result of the development of a cancerous production, and of engorgement of the glands situated in this region.

3º. *By suffocation.*—When the pectoral, the dorsal, the sterno-mastoid muscles, &c., remaining too long in a state of tetanic contraction, refuse to yield to the expansion of inspiration, and proportionally contract, at each expiration, the pulmonary capacity. Violent and long-continued running produces the same effect. The muscular tension thus induced contracts and empties more and more the pulmonary cavity; and the individual falls, deprived of breath, that is to say asphyxiated. Sudden joy or fright will, also, produce death in the same manner. Suffocation may likewise be more or less slowly induced by the pressure exerted upon the abdominal parietes, and also upon the diaphragm, in consequence of the accumulation of gases or of liquids in the cavity of the abdomen, especially where these are the result of fermentation of large quantities of drink or of food. In fact, when man gorges himself with victuals or with wine, and especially when he takes cold and iced liquors, he does not perceive at first that he is swallowing more than his stomach can properly contain. As soon as he ceases to drink, and when the process of digestion commences, fermentation takes place in the ingested mass, which increases more and more in volume; if the individual can vomit, he is relieved; but if, from the position and the compact nature of the alimentary mass, the excess is unable to escape by the cardiac orifice of the stomach, this viscus becomes more and more inflated by the products of fermentation, and pushes the intestines downwards, while the diaphragm is forced upwards against the lungs; the circulation, already greatly influenced by the action of the alcoholic drinks, is still further disturbed by the compression exercised upon the vena cava and the aorta. Asphyxia is imminent, unless the resources of art be quickly called in, to relieve the gourmand from the effects of his own gluttony. Do not expose him to cold; under these circumstances, cold exercises a most injurious effect; for by contracting the parietes, it proportionally diminishes the abdominal capacity, and still further increases the compression; independently of the disturbance which the change of temperature causes in all the animal functions. Lastly, the development of a hydatid, of a cancer, or of any other species of parasitical tissue, is, in certain cases, a more or less immediate cause of asphyxia, by reason of the compression which these masses may exercise upon the lungs.

5 *Cutaneous asphyxia.*—We have stated in a preceding lecture, that every tissue, when in contact with water, imbibes it, and when in contact with atmospheric air, aspires it. Now exhalation is a consequence of imbibition, as expiration is

of aspiration. Our cutaneous system is then a kind of branchial apparatus, which has its own species of respiration. The external air penetrates it in every part; it is exhaled through all its pores, after it has undergone its proper elaboration in the tissues. In the bath, we see the skin become covered with innumerable little bubbles, which are re-dissolved by the water. The skin transpires and respires; and if we cover it with a varnish which shall render it impermeable to the alternations of this double function, we shall kill the animal in a gradual manner, in the same way as we destroy the caterpillar, by placing a drop of oil over the stigmatic opening of its tracheæ. This similitude is not, however, perfect; for, oil when spread over our cutaneous system produces nothing at all resembling this in effect; inasmuch as it is readily absorbed by our pores, and is capable of assimilation, instead of remaining unacted upon like the varnish; oil will only produce an effect similar to that of the varnish, when the animal is kept plunged in the liquid, its head of course being free; for the layer of oil is then too thick to allow the passage of the air. The effect of cleanliness is merely to keep the pores of the skin, constantly in a state favourable to the regular action of transpiration and of respiration. A habit of uncleanliness keeps a man in a perpetual state of physical and of moral suffering.

Second Species.—*Dietetic or digestive causes of disease.*—Every organized cell respires and digests, that is to say elaborates, for the purpose of its own development and reproduction, the air which it has aspired, and the liquids which it has absorbed. But all organized beings do not ingest; that is to say, they are not all organised so as to maintain during a given time, and in a special reservoir, a certain quantity of elaborable and nutritive matter, which they shall have elected, by means of an apparatus of a peculiar structure, from the surrounding liquid or from the adjacent parts. The plant does not ingest; the same may be said of our river-polypus, which is a kind of organized tube, having a single and large opening, and which aspires and nourishes itself through the medium of all its surfaces; this cavity serving the animal less as a stomach, than as an asylum into which it withdraws its tentacula, on the least approach of danger. In animals of a more complicated structure, and which are provided with a special alimentary canal, whatever may be the proportions of such animal, the stomachic digestion, so designated to distinguish it from the cellular digestion, of which it is but an appendage,—the stomachic digestion is one and identical, in its mechanism, in the materials which it elaborates, and in the products which it extracts from them. It differs, from one animal to another, but in its accessory modifications of structure and of action.

I have established in my *système de chimie organique*, that the stomachic digestion takes place, by means of a fermentation at first saccharine, then alcoholic, and subsequently acetic; the gaseous products of which, hydrogen and carbonic acid, are absorbed by the walls of the stomach, whilst its acidified liquid products undergo, in the adjoining intestine, the *duodenum*, an alkaline transformation, which we have designated by the term of duodenal digestion; a final digestion, the products of which are absorbed by the chyliferous vessels, to be carried into the current of the circulation, and thence into the lung, where they become oxygenated and receive their colour, at least in the superior and red-blooded animals. Every species of fermentation supposes the concurrence and reaction upon each other of at least two immediate substances. Saccharine fermentation can only be induced by the action of a saccharifiable substance on the one hand, such as starch, and of a saccharifiant substance on the other, as glutinous matter. There is not, in the zoological scale, an individual animal, which derives its nourishment from a really immediate substance only; not a single one, for instance, which exists on sugar or gum alone; a food of this kind would be unable to furnish nutrition. We see insects which exist on leaves, others which live on fruit, on the bark of trees, &c.; while some again derive their sustenance within the skin, or on the muscular fibres of man and of animals; but this kind of food, which we designate by a single name, is in reality a very complicated kind of nourishment; for each of these alimentary substances is composed of a number of immediate products, the association of which may, under special circumstances, determine in an organ the stomachic fermentation. An imperfect diet famishes or poisons life: for then either no fermentation takes place at all, or else there is a fermentation of an abnormal character; and, consequently, the natural products of fermentation are either absent, or else they are totally different to those required for the cellular elaboration. A diet, perfect in its elements, but insufficient in quantity, is merely prejudicial to development; insufficiency is productive of death, only when carried to excess. To eat but little, and to labour hard, is to expend much more than we receive,—a condition which rapidly induces marasmus and exhaustion. This should act as a warning to those masters who exact much labour and give but little pay, and who impose on infancy, the work and toil which is fit only for the full-grown man. It also forms a subject for the consideration of those physicians who are so fond of placing patients on a spare diet without necessity and at mere hazard. A spare regimen may starve the disease, but it also destroys the powers of life. It cures of one disease, often to give rise to a worse; and we may see the patient saved from a headache, to perish from the effects of starvation.

Although the nutritive principle be essentially the same in all animals, the digestion is modified, as we have said above, according to the genera, the species, the individual, the mode of life, and even the locality or geographical position of the being. The food which one animal devours, might be a poison to another; for its organs may not have been formed by nature, nor modified by education, to elaborate with benefit the same kind of aliment. The food consumed by the inhabitants of the north, has no resemblance to that of the inhabitants of the south. The same may be said of those dwelling in the plains and those inhabiting the mountains: the Bernese, so active and so strongly formed, lives scarcely on anything but maize and fresh water; the inhabitant of the north feeds on wine and meat. Transplant these beings by emigration, and they will adapt themselves to the food of the climate; for it is that which man elaborates best, in that latitude or locality. I know of no more foolish policy than that adopted by those agricultural and hygienic societies or institutions, which, sitting in a room in Paris, dictate laws of a similar character for all the world, enjoining to the swarthy African, the same diet, the same clothing, and the same regimen, as that employed by the white inhabitant of Britain.

Man, of all living beings, is best enabled to adapt himself to different kinds of diet. Animals which are formed to domesticity, participate, to a certain extent, in this docility of their digestive organs. Man is herbivorous and carnivorous, according to the climate, and frequently both in the same climate; which amounts to saying that his digestion is more active or more slothful, according to the climate and the individual constitution. The end of digestion being to transform the vegetable into animal substance, the herb into flesh, it follows that the alimentary canal must expend least energy in digesting the flesh of animals; for it has then, so to speak, but to extract it. In those regions where life is most active, man is herbivorous: the Hindoo lives only on fruits. Where life is most dull and slothful, man is carnivorous; a Brahmin would quickly be obliged to relax the austerity of his order, in the north; while, in Hindostan, this austerity is merely a mild and easy regimen. Man possesses equally with animals the instinctive knowledge of that which is suitable to him; this instinct in him takes the name of taste. His taste, in a normal condition, is the rule of his wants; he has but to consult it, to keep himself in health; he has only to acquire a knowledge of himself. To oppose these natural tastes by medicinal prescriptions, instead of aliments, is not science, but pedantry; it is not a sign of being learned; it is only an attempt to appear so in the presence of suffering humanity.

The stomach is not a chemical vessel: it is an organ; digestion is its function; its walls, as we have said, absorb both the carbonic acid which is disengaged from the alimentary mass, and the liquid products which result from this internal fermentation. The stomach aspires and expires, absorbs and exhales; the alimentary mass, which furnishes the materials to the alternate action of these two different functions, cannot remain immovable, amidst the influence of these innumerable small movements, movements which become so powerful from their number. A body, the molecules of which are absorbed by some surface, and against which are projected the innumerable streams of a constant expiration, such a body must necessarily revolve upon its own axis, in the same way as we find a bubble, produced by blowing through a tobacco-pipe, turn round and round within the bowl of the instrument. This circular movement of the alimentary mass is perfectly visible, by means of the microscope, through the transparent walls of the stomach in some insects. The intestines, in like manner, are organs, the walls of which are endowed with the faculty of aspiration and of expiration. These walls, then, attract the alimentary mass by aspiration, and drive it lower down by expiration; hence their peristaltic movement, and the mechanism of defecation. The two opposed, though simultaneous and contiguous movements (from vesicle to vesicle) of aspiration and of expiration, must force the alimentary mass and the fæces in one direction; and in the normal state, and so long as elaboration continues, the alimentary mass cannot pass up again towards the mouth. In fact, the mass is aspired successively by all the alimentary surfaces, it is attracted in a direction from before backwards; the first vesicle, while attracting it, brings it nearer to the second, and so on in succession. Expiration must act in a sense opposite to that of aspiration; for, otherwise, it would happen that the orifice of expulsion would be precisely the same as that by which the mass entered, in an organ which is continually and simultaneously performing the double function of aspiration and of expiration. Expiration will then act so as to second, instead of opposing, the impulsion given to the alimentary mass by aspiration; it will tend to push more and more, towards the anus, that which aspiration attracts thither. The food will pass upwards towards the mouth, in those cases only where these functions shall be, so to speak, permuted, and where expiration shall take the place of aspiration in the alimentary vesicle; in this case, an antiperistaltic movement will take place, and vomiting will ensue as its consequence.

The stomachic digestion is acid, the duodenal alkaline; while digestion in the colon, or the fæcal stomach,* is ammoniacal. Any food or any accident which might tend to invert this order of elaboration, would, on the same principle, tend to provoke, by the antiperistaltic movement of the alimentary canal, the retrograde movement of the alimentary mass; we should have the fæces passing from the colon into the small intestines and the duodenum; while the bile, which is naturally

* This expression is not so much a figure as an analogy; but for a more detailed account of the subject I must refer you to Vol. III. of my *Systeme de Chimie Organique*. For, if we divide the human body into two regions separated by the diaphragm, and if we consider the sub-diaphragmatic portion, as an abortive deviation of the type upon which the supra-diaphragmatic region is organised; we shall find, in the first, the more or less developed outline of the second: the anus corresponding to the pharynx, the urethra and the vagina to the larynx, the clitoris and the penis to the tongue, the extremity of the coccyx to the abortive cranium, the rectum to the œsophagus, the colon to the stomach of the ruminantia, the cœcum to the duodenum, and the cœcal appendix to the choledic duct. If symmetry of forms and developments had taken the place of analogy, the animal would have formed a double polypiform group, in which the umbilical opening would have been the common anal opening.

emptied into the duodenum, would find its way into the stomach. Vomiting would thus become inevitable; each portion of the alimentary canal repelling, instead of attracting, the substance which is opposed to its alimentation; the duodenum rejecting that which is stercoraccous, the stomach that which is rendered alkaline by the bile; and this rejection taking place, in the direction given by the retrograde impulsion of the inferior organ to the indigested matter, it will be forcibly driven towards the buccal orifice; we shall then have stercoraceous or bilious vomiting. In general physiology, there is but one species of digestion, which is the cellular digestion; that is to say, the elaboration performed by the elementary cell (to its own increased development and reproduction), of the gases which it aspires and the liquids which it absorbs. These materials are regularly brought to it through the vehicle of the circulation, which, in its turn, is set in action by the very mechanism of this elaboration of the cell. In comparative physiology, however, we are obliged to admit two kinds: the preceding and the stomachic digestion; specific distinctions, and which possess no real similitude; for the cell is not a species of stomach; its elaboration is very different from the digestion of the stomach. The elaboration of the stomach is performed by the internal surface of that organ; that of the cell is an intimate and organic process, which is the origin of all the functions of what are called the superior organs.

We have here merely to consider stomachic digestion, or that operation which seems established for the purpose of preparing and distributing the nutritive fluid which becomes absorbed, so to speak, by the radicular *stomata* or pores of our body. In this respect, we may say that the stomach of vegetables is external, whilst that of animals is internal; the stomach of vegetables is upon the surface of their youngest roots. The *fibrillæ* of the meconium in the fœtus, and the intestinal villosities in the adult, are, in animals, the radicular appendices which have to extract, from the mass of nutrition or of aliments, the elementary substances, destined to the cellular elaboration of the various organs, entering into the economy of the individual. Any disturbance arising in this fundamental function of digestion, becomes an essential cause of disease by privation, —a cause less speedy in its results than asphyxia; for privation of air kills in a few seconds. Individuals have been known to bear lengthened abstinences, and even to continue fasting for several weeks, without appearing to suffer. The privations which we are now considering may arise, either from the unfavourable condition of the stomachic and intestinal surfaces, or from the vicious quality and abnormal quantity of the ingested aliment.

PENCILLINGS OF EMINENT MEDICAL MEN.

MR. JOHN MORGAN, F.L.S.

Next to Mr. Key in official importance presents himself Mr. John Morgan, F.L.S., for biographical consideration. In years, in length of standing, he is Mr. Key's cotemporary. His person is short, squat, and stout, with an unusual short cervical interval between it, and a large head. His countenance is inexpressibly heavy, sallow, and hypochondriacal; his eye, in life and expression, such as you might rival in any boiled sheep's eye in any butcher's bucket in any market in London; his forehead, denuded of hair, which seems to have perished prematurely, notwithstanding the richness of the soil, may be said to be of the composite kind, in which no particular organ predominates. Here you must not attempt to explain mental phenomena upon mechanical principles; as in David Hume's case, the powers of physiognomy were baffled by his countenance. The most skilful could not attempt to discover the smallest trace of the faculties of his mind. The expression of *his* face was actual imbecility; in this it is dullness. As yet Mr. Morgan has done little, and we may anticipate he will do still less, now that he has gained the object of his ambition—a seat in the council of the college, which is not won by merit, but often by low, servile, intriguing, surreptitious, and discreditable means, as the list of names abundantly testifies, and whose pretensions, if rebuked by "the powers that be," would never have led to aspire so high, if answered, something in the spirit of the monarch who was solicited to give a general the baton of a marshal; he replied, "Ce n'est pas, moi, qui fait les Marechaux; c'est la Victoire."

It is probable that the subject of our sketch is not destined to interest much the present or future generations, as to the place of his birth, his parentage, or his education. The natal incidents of great men only are worthy of record as they furnish the philosopher with guides to trace the leading features of the mind through its gradual development, that astonishes in the maturity of life, and confirm the Italian proverb, or rather Alfiero's truism—"L'uomo é una continuazione del bambino."

The *unde et quo natus* are before us; we will not stop to give them. He is, we believe, the best man of his family, and that is saying a great deal for him, for the Morgans are very numerous in England and *Wales*. Of his kindred, past and present, he is the tallest, to use an Americanism. He boasts of a nobler origin than the Duke of Richmond,—there is no flaw in the female line. Next to an honest man, an honest woman is the noblest work of God. Some silly people refer back with pride to their grandfathers and mothers. Morgan can go with truth further still, until he comes to Adam and Eve, for he is, I find, descended from that venerable couple in the right line. Servile and reverential homage to King Harrison, a douceur in the shape of a large fee to his prime minister, and cunning enough to follow, as a rule of life, from which he never departed, the following principle—"principibus placere viris," introduced him to office as assistant-surgeon to Guy's.

His first appearance in print, we find, is in connection with the removal of a large tumour from the neck, which was dexterously performed, but attended with an unfavorable issue. In 1827, he performed a very neat operation for restoring the lower lip, after its removal for carcinoma:—

He made an incision across the throat about two inches below the chin, completely from side to side, in a direction somewhat semi-lunar; the portion of integument between this and the site of the removed lip, being detached above and below, but retaining its connection at the sides, so as to form the new lip. Mr. Morgan separated its inner surface from its connection with the deeper parts, so that it formed a loose isthmus, a bridge of skin attached only at the ends. He then drew it over the jaw up to the mouth, so that its upper margin corresponded with the natural situation of the lower lip, and when fixed by sutures to the upper lip, three at the left angle of the mouth, and two at the right, a very well formed mouth was produced. By depressing the chin upon the chest, he was able to approximate the edges of the wound in the neck by five sutures. In a fortnight, it was quite healed, and formed a very fine specimen of what art could accomplish. In shaving, when the razor was applied to his lip, he referred the sensation *to the throat*, where it was taken. The idea of the operation was discountenanced by all Mr. Morgan's surgical friends as hopeless and rash. It was quite a feather in his cap, and deservedly so. From Guy's Hospital Reports we learn, that he removed a large part of the inferior maxilla for fungous Exostosis, in which operation the cheek and lip were divided, and parotid gland, down to symphysis, the gum, and considerable portions of the lining membrane of the mouth removed backwards by the side of the tongue, and separation effected finally by the division of the pterygoid muscles, four vessels only required ligatures. The patient bore it with great fortitude, and left quite free from diseae.

From this, there was a long, dreary, and dark interval in his career. This, the meridian of his existence, the most active time in men's lives, the period at which we expect most from the maturity of intellectual and physical vigor, we expected he would have done something to establish his fame, and to justify his appointment to a public situation. We have waded through all the periodicals; we have sought in vain in the repositories of knowledge, to find some contributions to science,—some evidences or scintillations of mental activity. We assured ourselves, from the vast field of disease that lay before him, that he must have gleaned some valuable observations, some useful facts, that would advance his art; and after traversing this long space—this long record of years—we find nothing, literally nothing, to reward our toil, or to reconcile us, or our readers to this unbroken silence, or to the system that gives the highest posts within the gift of the profession to hospital surgeons, merely because they are hospital surgeons, and who have done nothing to entitle them to such a privilege. We must even admit that these negative claims are indeed a reason sufficiently strong in itself to exclude a man who has neglected to avail himself of the advantages which his situation affords him, and that the unjust, absurd, and perverted legislation of the imbeciles who mis-manage the affairs of the College, and who outrage, by their enactments, the feelings, and injure the interests of the members, will not long, although they may be supported by the arbitrary, unconstitutional trickery of a changeling, and leaden-headed Secretary of State, sustain them in their attempts to prevent the hard-working man of science—the man whose labors and whose writings have done everything for the public and the profession, and in contrast to whose scientific labors, that of the associated *pures* are as a drop of water to the ocean, must take that high position to which his usefulness and attainments entitle *him*. By this sapient and *consistent* senator, the claims of the whole body of the members are decided unheard—their grievances not redressed, but increased and aggravated. Sir Benjamin Brodie has earwigged him to some purpose. The Secretary of State has allowed himself to be duped and imposed on by this wily and jesuitical baronet, who is an interested party, and as he grows older, every day becomes more and more enamoured of gold. We entertained ourselves the other evening by calculating the amount which the examiners receive, and each received ten guineas, at least, for the evening's farce. Seventeen passed. Ten examiners there, we have 100 guineas taken out of the funds of the College, which is the property of the members. Now and then, one of those lucky nights occur three times a week, which would make 30 guineas to each. It does not surprise us, that this *immaculate* body should so determinately oppose reform, and have recourse to every mean expedient to prevent the ruthless hand of innovation reaching those snug and comfortable perquisites. We can vouch for this fact. Sir Benjamin Brodie, when he visited Sir James Graham at the Home Office, always got out of his carriage at a distance, and slipped in stealthily, like a thief, and enquired after another person in the office, when he really came to concoct schemes of injury, insult, and degradation to his medical brethren. He pretended that his visits were merely professional. Now, we ask why such disingenuous behaviour? Why resort to such low subterfuges, unless he felt that darkness best suited the part he was playing, and that professional indignation would be exerted against every one connected with this vile scheme, called a Charter, which increases the evils of the old system, without introducing one clause of a wholesome or beneficial character. It adds to the number of exclusives, without giving to the many—the members—one single advantage. It makes not the slightest concession. It would appear, that this was to partake of the fate and character of every measure that has hitherto emanated from the present ministry. Every system of government, from Adam down to Jeremy Bentham, professes, at least, to consult for the good of the greatest number. Here they are treated as nonentities; they are allowed no voice, nor vote, nor influence in their own corporate affairs. Here the few, who we have no hesitation in asserting, and are ready to prove it at the bar of the House of Commons, if necessary, are the most ignorant, the most useless, the least employed, who never had the confidence of the public, for the majority of them have no practice, for we can mention one half-dozen of those *pures*, and we can cite one general practitioner who prescribes for more patients, aye, than

a dozen of them put together. Yet they are to be uplifted over the heads of the intelligent, the working men of the profession. They offer a bounty upon ignorance, by exacting, as a condition of election, a promise not to practice one of the most useful branches of the healing art, viz., midwifery. They make a merit of not knowing chemistry, and to be profoundly ignorant of the property of drugs, or of their genuineness. This is an accomplishment they cannot too much admire, and in truth, we must admit that they are accomplished, in this respect, to perfection. Until Abernethy proved, that the practice of medicine was inseparable from the proper treatment of a surgical case, they, in their arrogance and ignorance, which are too generally inseparable, were used to boast that they knew nothing of medicine. Sir Benjamin Brodie, in one of his introductories, thus speaks of the body of men to whom he denies the right of self-government,—" Your profession, gentlemen, will require you to mix with the public—the multitude; but your acquirements will be such that it will not be necessary for you to *cringe*, or stoop to any man. You can make your own place in society, and the rank or station that you hold, must rest entirely on yourselves. It will occasionally happen, that the imbecile portion of the inheritors of *hereditary titles* and wealth, will pay no regard to your claim of respect; will even be careless of and *slight* you; place this to the account of their ignorance and folly; regard it not, and always remember, that the esteem of a man of *knowledge* is of more stirling value than that of all the *titled ignorance* in the world."

We confess we were not prepared for this last stroke of Machiavellian policy. We knew the desperate tenacity with which corrupt men will cling to the golden mitres which they have so long usurped; and that the old maxim of our forefathers is not forgotten—

> It is the earnest duty, all the learned think,
> To prop the cause by which they eat and drink.

Still we were not prepared for this underhand, low, insidious, and cowardly manner of defeating the lawful efforts of the great body of the profession. We expected that they would have had the good sense and decency to try to disarm hostility by some approach to the appearance of liberality, and that they would fain endeavour to appease indignation, and general resentment, and discontent, by generous concession. That they would not have dared to refuse the general practitioner,—who is now, to use the words of Sir James Clark, the profession,—if he were a member, the right of electing to the Council. We thought that, having remained so many years at the bottom of the wheel, that the next revolution must elevate, but could not depress us to a lower state. In all these just anticipations we were mistaken. We will give an instance of how this notable project will work. In our neighbourhood there is a gentleman who has a practice four times as large as many of the *pures* adverted to. Three of his former apprentices have their names on brass plates, and make a merit of necessity, by dispensing no medicine; for the best of all possible reasons, that no person thinks it worth their time to consult them. Yet they are to have a vote, and take rank above their late master, whose talents and skill have been appreciated by the public for years.

Oh, sapient legislators! Nothing equals your sagacity but your *justice!*

From personal observation, we can affirm that there are several self-elected men on the Council of the College,

> ——— With scarcely wit enough at most,
> To guard their master 'gainst a post.

Still we could not bring ourselves to think that they were such asses as not to foresee the consequences of their folly and injustice, that they are so blind as not to perceive the storm which the last act will work. They will do this good undesignedly. They will become the instruments of our disenthralment. This Charter will break the lethargic spell in which we have been bound, and infuse into our torpid veins a portion of that spirit which animates every other body but our own.

The public safety and convenience require that the medical man should make up his own prescription. He is thus assured that they are correctly compounded, and the life of his patient protected from the ignorance of chemists' boys. These circumstances, which are the result of the enactments of the governing bodies themselves, and the necessities of the public, which must always be the primary consideration, are perverted into a crime, into a source of disqualification, and form a lame, shallow, and impotent excuse for the degradation of their medical brethren, who have undergone the same course of study and examination as themselves. I grant that the man who retails drugs, and other articles, who makes up the prescriptions of others, sinks the profession into a trade; from such men I would empower them to withhold the right of self-government or representation, until they had placed themselves within the pale of professional men. I would make it an inducement for such a person to take his proper place in society.

I find myself guilty of angry irrelevancy; indignation has carried me away from the subject of my sketch. The passion for the honour and exaltation of the profession is excusable; like that of the love for the glory of our country, it is to be encouraged, rather than extinguished. Every man in his sphere ought to warm his heart and stimulate his exertions, with the hope of improving the art which it is his lot to exercise, and ought to try to convert it from a receptacle of abuse, from a temple of money-changers, into the sanctuary of science which the country and Parliament intended it to be. Until this is done, and the goal be open to all—until there is a proper incentive to honest and laudable rivalry—until just ambition be stimulated by seeing that honours and rewards, and high office, is accessible to talent and industry, and the hateful toll-gates and barriers which selfish and *little* men have placed across the avenues to science—until the course is cleared, and we feel the race is indeed to the swift, and the battle to the strong, there is no hope for the profession. This vile Charter has called up these reflections; we will dismiss them by quoting the true and eloquent opinion of the Editor of the *Medical Times*. "It is an abuse of the royal prerogative for an unjust purpose—it is a perversion of the will of Parliament—it is in direct contravention of the will of nineteen-twentieths of all those it concerned—it was a private adjudication on a matter of grave concern, in which the only party heard was that one which alone will profit by the judgment—it was a deed done in the dark, without consulting those who, it was all-important both to justice and policy, should have been consulted."

So much for the last nostrum of our quack Secretary of State, who has the singular felicity of failing in every measure which he recommends, of offending every party which he professes to please, and of converting every friend into a foe, and damaging and deceiving every party and every cause which he undertakes to espouse. We exonerate our quiet friend Morgan of any of the vices of his colleagues. He has been only recently introduced amongst them; he must, however, make up his mind to share the odium which necessarily attaches to their acts.

We have heard Mr. Morgan—we were in courteous phraseology about to say, we have had the pleasure, but candour arrested our pen, and obliged us to withhold the word that only could be written at the expense of truth. He shouts out his observations like a bad actor, who is anxious to get rid of his part as soon as possible; or he is distrustful of his memory, to which he has committed the entire of his discourse; and well he may, for the treacherous jade betrays him in every sentence. She seems to be playing at hide and seek with him. When he breaks down, he coolly begins the sentence, repeats it *literatim*, and woos her again; and just as he regains a glance, and is enabled to resume his discourse, she is off again. He turns back, and trusts to picking her up as he returns.

When she escapes altogether, he seems bothered and bewildered; he makes no attempt to continue or recover the thread of his discourse, but jumps to the next paragraph, which he has off by heart, and which he has been chaunting for a series of sessions in the same key, and to the same tune. He raises his voice at the end of every period, probably to make it more emphatic, exactly in the style of some of those open preachers or weavers who have got a call, and fancy they can cut out a religion with the same facility a tailor can cut out a coat.

His rhythm so regular, so strictly observed, makes his lecture ridiculous, monotonous, and conventicular. When he feels he cannot break down, he becomes almost rapid, but without varying his intonations, which make it so desirable. Let him deliver himself more slowly, and he will become more interesting; study inflections and variations of his vocal organs, and he will become more pleasing. We offer these hints, and hope he will benefit by them. The matter of his lectures contains no new views, no hints, no scientific speculation, never invest with interest the dry details of what is before them; no anecdote, no refreshing analogies, no illustrations, nothing that cannot be found in any work on the subject. Now and then he dares to differ from some authority, who recommends a cold—he prefers a hot poultice. Some such important information he supposes compensates the young gentlemen in curls, in rings, and taglionis that assemble to listen to him, for their loss of time.

He published in 1839, an octavo, entitled "Lectures on Diseases of the Eye," illustrated by coloured plates. His object, he tells us in the preface, is to describe concisely and clearly the more common and more important affections to which the eye is subjected. He has no pretensions to oppose the works of Travers, Lawrence, Mackenzie. This humble volume is a kind of reading made easy for the students of Guy's, a mere elementary work, in which there is nothing extraordinary or very valuable to be found, and we were puzzled to discover for what purpose it was written. His plan is simple, strictly scientific. Like others who had gone before him, he finds fault with the shameful and ignorant neglect of ophthalmic surgery. The Council of the College, who, in their eagerness to clutch the gold of the candidates, did not place it in the catalogue of their requirements; with them the blame should rest. He begins with diseases of the conjunctiva. He lays great stress upon a *certain* mode of opening the inflamed eye, but which has been practised by every competent surgeon for years. He says you should gently draw the lower lid downwards towards the cheek with the point of the forefinger of one hand, and with the thumb or forefinger of the other draw the skin covering the upper lid upwards towards the supra-orbitar ridge. This is the valuable information of a *pure*, for you unprivileged ones! Poor aliens, learn that you are not to put your thumbs into your mouths, or your fingers into your patients' eyes!! Thanks to you, Mr. Morgan.

He opens with a diagram of this grand discovery.—In chronic cases of aphthous inflammation of the conjunctiva, he recommends vinum and liquour opii sedativus, undiluted, as collyria. In variolous inflammation he is fond of rose-water. In purulent opththalmia he is very averse to depletion; a leech to the upper lid does good. After he has diminished inflammation, he excites the suppurating surfaces to altered action, by astringents. In the third stage he gives tonics. He enters into an unnecessary physiological disquisition on the imputed influence of antimony on the system, a mixture of twaddle, conjecture, antiquated, and sublimated nonsense, stuffed in to swell every worthless volume, which the press vomits forth in such shoals at the present day.

Then we have the old story of the abscess of the antrum not being an abscess at all. He has discovered, too, that the temperature of the tears is not increased, although some authors describe them as scalding hot! He removes a large pterygum in the following manner. The *lids* to be kept separated, and the globe fixed by an assistant. The central portion is to be transfixed with a small tenaculum held in the left hand, and drawn forwards, so as to put upon the stretch its cellular connections with the sclerotic. A common phymosis knife is to be passed behind the tumour, and by bringing its cutting edge out, a section is made through it by a second incision, in the same way the central portion is readily and easily removed. In recent opacities of the cornea, he succeeds in

removing them by hydrochloric acid 5m., liq. calcis ℥j. as a collyrium.

Ulcers of the cornea, when a slough is formed on the floor of the ulcer, of a yellow, or brownish are treated by colour, nitrate of silver. Not one word of chemosis, or the great operation for it by his brother-oculist of St. Thomas.

The diagrams are very roughly executed, that of Capsulo-lenticular cataract, and the steps of the usual modes of operation, for cataract, are the best. The operation for solution he prefers to depression or extraction. The operation, he thinks, may be performed in all cases of cataract with success. It is more applicable to those cases where the lens is softened down; it is exceedingly simple. A needle is passed about the distance of a line from the junction of the cornea and sclerotic tunic. The point is to be directed to the central anterior surface of the lens, and lacerate it. Mr. Guthrie's operation for entropion he slights, and properly, for we have found that the only radical cure is excision of the cartilage. He never uses the style—he follows the plan of that accomplished surgeon, and original thinker, Mr. Travers, who by his ability and great acquirements, ought to have the largest practice in London. With this he concludes 221 pages, which might, by high pressure, be compressed into half a dozen pages.

We have dwelt more largely than necessary upon this work, not only to shew the justness of our strictures, but as the decease of that much-esteemed gentleman, Mr. Tyrrell, has left a vacuum in the city, which Mr. M. aspires to fill, it may be interesting to give more insight into his views. He will never be as elegant an operator, who was an ambidexter, and who could perform with equal certainty with either hand. We believe Mr. Morgan will be as safe, if he is not as accomplished, an oculist. We believe Mr. Morgan is an honest and independent man. He may not possess striking talent, it is true, but there is nothing to prevent an individual, however humbly endowed by nature, trying by industry, exerted in a proper sphere, to ensure respect and beget confidence; and if he cannot command our applause, he may pass without provoking our censure: it is only on the ground of undue elevation to public situations, unsuited to the capacity, by the injudicious ambition and interest of friends, that they justly become objects of merited reproof and ridicule. He can, in many respects, lay claim to the character of a modest man. He does not strut about in borrowed plumage, like a pouter pigeon, pretending to a monopoly of special knowledge, merely because he is a servile translator of other men's observations; without, too, one original idea, either in their heads or in their works. Some of such things we will vivisect for the information of our readers, in a few weeks. They will constitute a specimen of the class—a *pars pro toto*, or *synecdochic* delineation of the *pures* who are daily and impatiently enquiring of Mr. Balfour when they are to assume their new functions, and, on a large scale, act as toadies, parasites, satellites, and sycophants, to "the powers that be."

Morgan has none of this offensive folly about him. He is content with being an humble but useful compiler. In the 16th volume of the Transactions of the Linnean Society of London, there is a description of the mammary organs of the kangaroo. The development and growth of the uterus in marsupial animals was not correctly ascertained. He submitted the observations made on a female kangaroo, both in the virgin and impregnated state, with a description of the anatomical structure of the mammary organs and pouch. Sir Everard Home published, or rather printed, what he purloined from Hunter's description of the pouch. Mr. Morgan corrected some of his errors. Geoffrey St. Hilaire, in the *Annales de Sciences*, 1826, has described the compressing muscle of the teat of the kangaroo, which he was so proud to regard as a discovery.—The pupils have now and then complained of his irritability of temper, and indifference to their interests, with what correctness we will not aver.

Next week, we hope to give sketches of Mr. Bransby Cooper and Mr. Calloway, to make up for our past remissness. PROBE.

TO CORRESPONDENTS.

We have the names of several subscribers before us—not in type—whose bills are long owing; we shall be glad to be favoured with their autographs to post-office orders. We should treasure them as curiosities.

Mr. G. Cumberland *sends us a new method for removing cataract, without extracting the chrystalline lens, or disturbing its capsule, or, as by Mr. Stephenson's method, agitating the foul deposit:—*

"It is simply this—that the chrystalline be punctured at its side, by a tubercular instrument in lieu of the lancet, through the cavity of which the foul tumour of the chrystalline might be slowly extracted by a piston, or other similar contrivance, so as to give time for its receiving a purer humour from the secreting organs, and thus to prevent the collapsing of the capsule."

M. B. *hopes we will use our influence with the medical profession, in stirring them actively to avail themselves of the advantages which are offered to them by the opportunity they will have of exposing the iniquities of the Poor Law Medical Department before Lord Ashley's committee, next session. Let but, he says, the enormities of the system be fully set before them, and the effect will be as certain and useful as the noble lord's* exposé *of the barbarities in the collieries. As a medical officer under the law, he intends to furnish his little but not unimportant experience, as requested by Mr. Guthrie. He suggests, as of vital importance, the proposition of a suitable remedy—a plan well-digested, and effectual for the purpose. It must not be left to the Guardians. He suggests a fixed rate of payment, though he thinks a per case system the best.—Our correspondent may be sure we will not neglect a subject so important to a hard-working and ill-paid portion of our body. There is, however, plenty of time.*

Medicus *implicitly* "*relies on our candour and proferred columns,*" and our "*pledge to hear both sides,*" *that we will insert a long communication of his, proving Dr. Dickson to be, by his own confession, a follower of* "*Hippocrates, and of every writer of name, from Culloden downwards,*" *in his doctrines as to periodicity. We thank our correspondent for his kind opinion, but are not aware that we proferred our columns to his reliance, or pledged ourselves to hear the two sides, or that if we did, that he—a shadow—can be admitted as one of them. We are aware, first, that we pledged ourselves that no more on the personal controversy should be inserted in our journal, except in the shape of an advertisement; secondly, that* Medicus *subsequently sent us an elaborately empty paper, full of personalities, proving what every body knew before (and what, indeed, has been expressed by us, above, in one line) and, thirdly, that because we had no room for our notice of it last week, more than of a mass of other correspondence, we received a note from* Medicus, *charging us with being notoriously unfair, and acting as direct partizans of Dr. Dickson, and perpetrators of injustice to Dr. Laycock. When we remember our review of Dr. Dickson's book, and our giving Dr. Laycock, as was his due, the last word in the recent correspondence, we can well afford to smile at the charge. Medicus is—we fancy—very young, and we shall be better friends as he gets older.*

A Union Surgeon *sends for Mr. Guthrie, and the public, the following particulars:—*

"The question, what constitutes a proper object, or a 'poor person,' claiming medical relief, has not been defined, consequently we are subject to impositions, and saddled with a number of the poor who ought not to be included in the union practice. The overseer, in the absence of the relieving officer, can discriminate, or not, in the choice of proper objects; we have no check against occasional mistakes, and are bound to attend to all written orders sent to us without the power of refusing compliance, and to continue our attendance until the following weekly board meeting, when the case may have terminated in health or death; otherwise, we receive further orders to continue or discontinue our attendance, as the board may think proper to direct. No additional remuneration is voluntarily granted us for illegal cases; our limited stipend was only intended for services conferred on a limited number of poor, otherwise it would not be right to quibble about a few doubtful cases; but in our present position, the public have no claim upon the liberality of our profession for the performance of charitable actions. A person may be too poor to pay the doctor, and not poor enough to be admitted on the union; and the doctor may possibly prescribe for him gratuitously, but these are points quite irrelative to the one in question." *He adds:*—"In reference to the subject of vaccination, comparatively few children are brought to be vaccinated;—vaccination must either be made compulsory, or the surgeon should receive such compensation as would induce him to go from house to house in search of cases."

A Member of the College *writes in urgent terms, suggesting an immediate aggregate meeting of the London General Practitioners. He also laments with us the past inefficacy of associations on this matter, and advises the Provincial Association to call general meetings of its members. We think that large body might now distinguish itself, if it would but pursue the course that now plainly lies open for it. Deputations are mere shams; they only waste time that might be better employed; they consume in a caricature of negociation the time that should be spent in action. Dr. Hastings will do well to remember that our procrastinations are our opponents' successes. Dr. Forbes used to be a man of business; what is he doing?*

A.F.G.—*We are not aware on what considerations the cheap German degrees are granted. One of them is money; and, in our correspondent's case, that may suffice. Would it not be as easy, and quite as cheap, to try the establishment in Pall-Mall?*

Ignoramus *is right. But we have no room for the case, and no inclination for comment. On the lowering system the general health is too often sacrificed, without even benefitting the local derangement.*

A Constant Reader, York.—*We cannot understand the other journal's silence on the present crisis of the profession: we suppose them uninformed, or haply, indifferent.*

M. D.—*We receive so many such notices that we can only publish the more* piquant: *we give, however, our best thanks.*

Mr. H.—*Try the Commissioners. They are, in some cases, a degree better than the Guardians.*

Vi et Armis.—*We will publish the paper, if the writer will shew us a respectable name for its statements.*

Correspondents whose names are not referred to, will have the goodness to think their contributions declined.

THE MEDICAL TIMES.

SATURDAY, AUGUST 26, 1843.

Thus bad begins, and worse remains behind.
SHAKSPERE.

We are not aware of anything in an attachment to Medical Reform which enforces hostility to the existence of a class of men acting as pure surgeons. Medical Reform—however misunderstood by the *soi-disant* conductor of a journal, now in the last convulsive struggle of a galloping consumption—is not the vulgar thing which interferes with the refining tendency to a division of labour—which allocates the labours of science, without reference to varied tastes and habits—and which would make the practice, whatever it might be, of one man or a class, the rigidly enjoined code of all others. The great principle we advocate, is marked by a far truer sign of the spirit of freedom and wisdom. Its maxim is non-intervention: its practice, to impose no laws where they are not of a greater service to society than their absence. It will not wantonly take any step either to identify or vary medical men's associations. It knows of no restriction, save for the

strong and justifying reason of avoiding a greater evil, as it is acquainted with no distinction save on proofs of different merits, and for purposes of assured utility. Nay, if we understand it rightly, it interfereres not even with an individual's humour in the practice of our art, if it be not one which is clearly injurious to science, or fatal to life.

We are, therefore, far from joining those who deprecate the existence of that "Young England" of Medicine—the unfeathered brood of pure surgeons. They are a race naturally enough springing out of the present state of society, and are not without their special utilities to science. Born in the lap of wealth, or nurtured, at all events, in that of ease, the young gentlemen merely gratify a caprice of their own, or friends, in honouring us with their comembership. The business of their life—happy men—is to be gentlemen; its relaxation, to be surgeons. Some will hang about hospitals—a weary, expecting life—*promenading* bungs, ready to fill any hole which chance, or fate, or Mammon may make or open to them. Others, whose day's professional duties are complete when they have seen that their door-plate is duly secured, compilate books, in which,—thanks to their vivid imaginations,—such old birds as ourselves are instructed by the ample records of their extended experience, and guided in our practice by the authoritative voice of their very old, or very new, recommendations. A third set, less idle or less statesmanlike, will betake themselve to speculative enquiries or experimental researches—and while some will content themselves with being able to talk, or guess, up to the present state of advancing science, others, for aught we know, may conquer the natural indolence of their position, and be lured by the attractions of knowledge to investigations worthy their profession,

Now, we do not know why all this should not be so. We see *little* reason why they should not be as genteel, and theoretical, and unpractical as they please, —and none why they should be made to learn at the times, and in the manners, fixed by the worthy *head* apothecaries *(lucus a non lucendo)*, or why they should be forced into seeing disease in humble life, trying and relying on their own judgments, and making themselves the very opposite to what they now are—men in whom people may wisely confide to treat a disease or perform an operation. The respectable young gentlemen have, or might have, all use enough, if people would not misuse them. Every thing would be quite right if we were but allowed to leave them where they leave themselves. What we object to is, not that there are such people, but that the state and public bodies in this kingdom are made to act wherever favour, reward, or scientific encouragement is in question, as if they were the only people in our profession—that while to the thousands of the profession, great erudition, great experience, and the highest ability, lead to nothing—to these favoured units, the utter want of everything, but position, may lead to anything. Instead of knowledge being their road to lectureships, lectureships are their road to knowledge,—instead of experience gaining them their hospital surgeonships, hospital surgeonships gain them their experience.

Now, it is no weak illustration of the progress of Medical Reform, or of the sincerity of its new-born advocacy by some prominent members of the College Council, that while this extraordinary preference and favouritism, enjoyed by "Young England" in our hospitals, was deplored as one of the most urgently-pressing grievances, yet that *this very week* the young gentlemen are carefully selected throughout the whole of England, and raised by a charter from the royal hand to high corporate privileges—invested with titles of superiority—and endowed with a power of government over the thousands of their former equals and co-members—their present subordinates—we had almost said—*licentiates!*

The more we reflect on this extraordinary provision of the New Charter, the more we are convinced of its impolicy and injustice. We cannot, for the life of us, discover why the State should pretend to know that our profession has one set of men who attend surgical cases, and give medicines through a druggist—and another attending the same cases, but who send their medicines through an assistant or apprentice. The difference is so thoroughly contemptible, that it really does not justify, even in an indivividual, a mental division of the two classes of practitioners. Their duties are not only equal, but identical. If the apothecary-surgeon attend medical cases, so does the pure surgeon when he can get them. In theory he does not—but if this can give anything, it can only give a title to theoretical distinctions and emoluments. If there be any difference in education, it is rather against the pure surgeon; for the apothecary-surgeon not only acquires and proves the same competency, but has to acquire a far more extended amount of professional knowledge, and gain the approval of stricter requisitionists. There was a sect—we learn from ecclesiastical annals—who held that the height of sin was the height of good works, and it would almost appear that the last holders of the heresy are to be looked for in Lincoln's-inn-Fields and the Home Office. The degradation of the great bulk of the members of the College is avowedly grounded on no other pretext, than that they know more than those who have been placed above them. This carries important information to medical tyros: ours is one of those scientific professions in which the way to advancement is to fall back in science. How many of our hospital surgeons must this be good news to! On this principle, Mr. Guthrie's proximate disappearance from the College Council, even before the rotative time kindly fixed by him, ought not to surprise us. He is veritably too deserving to be a fit subject for College honours.

If Government be consistent, we shall soon have the aurists, and oculists, and chiropodists in high repute. If the surgeons who can't pass examinations at the Apothecaries' Hall, are, for that reason, more worthy of distinction than those who can, an extra pure surgeon—the Thornton we extinguished, for example—who confined himself to the ear, or the eye, or the spine, or the toe, ought to be in a very high degree of worthiness indeed. We think—with some diffidence—he would have a claim over the L——'s and P——'s, A——'s, and some other "consulting" surgeons we know.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 17th Aug., 1843.

A place being vacant at the Academy of Medicine, Section of Internal Pathology, the following list of candidates has been proposed by the commission named by that assembly: Messrs. Briquet, Gibert, Martinet, Nonatz, Prus, Reguin. A periodical mentions that M. C. Broussais, who has just published an interesting account of an epidemic of meningo-cerebro-spinalis, which has lately manifested itself in several garrisons, is not on the list, though at the last election (same Section) he was second in rank, not in consequence of incapacity, but because he has not been sufficiently active in canvassing.

The statue of Bichat will shortly be erected at Bourges. At the ceremony, the Faculty of Medicine will be represented by Professor Royer-Collard, and the Academy of Medicine by M. Parisat. The author of the statue is M. David d'Angers, member of the Institute.

M. Gintrac, professor at the School of Medicine, Bordeaux, has published a memoir to prove that phthisis and intermittent fever reign simultaneously in the same localities, and that the presence of one does not prevent the development of the other.

During the years 1839, 1840, 1841, 1842; 4,458 patients were admitted in St. Andrew's Hospital, Bourdeaux, of which 1201 were affected with intermittent fever, and 153 with phthisis. On 254 deaths, 73 were produced by phthisis, or 28·35 per cent. In order to observe if there was antagonism, or simply coincidence, the author divided the department of the Gironde into three parts. 1st. The country situated on the right bank of the Gironde and Garonne; population 206,915 inhabitants.—2nd. That situated on the left bank, population 91,332 inhabitants.—3rd. Bordeaux, 98,705 inhabitants, and its suburbs, 9,615 inhabitants; total 108,320.

From the 1201 cases of intermittent fever, 330 must be deducted, 290 being strangers, and 40 whose residence was unknown. Of the 871 remaining, Bordeaux furnished in 1839, one hundred and fifty-two cases; in 1840, one hundred and eleven; in 1841, forty-three; in 1842, sixty-one; the suburbs, during the four years, twenty cases; total, 387 cases. The right bank, in 1839, thirty-two cases; in 1840, twenty-seven cases; in 1841, seventeen cases; and, in 1842, twenty-nine cases; total 105 cases. The left bank, in 1839, one hundred and thirty-nine cases; in 1840, seventy-seven; in 1841, sixty-four; and, in 1842, ninety-nine; total 379 cases. On 134 cases of phthisis, (14 being strangers were deducted from the 153 above mentioned) Bordeaux and its suburbs gave, in 1839, twenty-seven cases; in 1840, thirty-five cases; in 1841, twenty; and, in 1842, eighteen; total, 100. The right bank, during the four years, seven cases; and the left bank twenty-seven. Thus, in the localities in which intermittent fever was most prevalent, phthisis was equally so. Bordeaux and its suburbs furnished 387 cases of

the former, and 100 of the latter. The same remark is applicable to the right and left banks. In some cases, phthisis was preceded by intermittent fever, and in others, the symptoms of each disorder appeared alternatively. From the foregoing facts, we may conclude, 1st., that intermittent fever is not a preservative from phthisis, and *vice versa*.—2nd. That the existence of the former does not prevent the appearance of the latter.—3rd. That they both take place in the same locality, and that the same patient may be affected by them.

Two letters addressed to M. Boudin maintain a contrary opinion. The first is from M. Nepple, Lyons, who says that phthisis is seldom observed in marshy countries; that in places situated in the centre of the miasma, not a single case of phthisis is to be found, and that they augment in number, as the distance from the focus increases. He further asserts, that the reason why in many places intermittent fever and phthisis reign together, is that the paludian miasma has sufficient intensity to produce the former, but not enough to modify the system so as to oppose the development of the latter. The second is from M. Pacoud, of Bourg, who says that he has never met with phthisis in marshy situations, though he has been in practice upwards of 45 years, and that the hospital of Bourg, which receives a great number of patients affected with intermittent fever from those localities, never receives any afflicted with phthisical disorders.

A new crime is now to be added to the list of those, which the department of the Haute-Saone has of late presented to the amateurs of judiciary dramas, and which is interesting, inasmuch as it is the first time a similar substance has been given as a poison, and the parts of the unfortunate victim analysed. J. J. Pouchon was attacked by a serious disorder, and being unable to pay for medical attendance, was taken to the hospital of Puy, where he remained a long time. During his absence, his wife formed an illicit connection with Andrew Rocher, a dyer at Vorey, and vexed at her husband's return, she resolved, with the aid of her lover, to remove him. Two or three days after, Pouchon was seized with violent colic, accompanied with abundant vomiting, and he died in consequence. Public rumour accused the wife and Rocher of having poisoned him; the body was exhumed, and several parts analysed. M. Barse, of Riom, states that he discovered a considerable quantity of lead, (the substance given is supposed to be the acetate of lead) but M. Dupasquier, of Lyons, being of a different opinion, Professor Orfila has been requested by the Court to give his opinion, and he has accepted the office of arbitrator.

M. Gunsbourg, M.D., Breslau, Prussia, has sent to the Academy of Sciences a memoir, interesting from the statistics it contains of the number of persons affected with plica polonica in the Grand Duchy of Posen. The author calls this disease, (known in Poland under the name of koltun, and in Germany under that of trichoma, plica polonica, weichselzof) mijeo-derma-plicœtricomaphyton, and says it is a vegetation; consequently to cure this disease, such medicines must be employed as will destroy the parasite, and suggests the tinctura iodini.

In 1842, there existed in the 21 departments which compose the Grand Duchy, on a population of 1,233,850 inhabitants, 2,460 males affected with trichoma, and 2,867 females. Total 5,327, or 1 on 231 $\frac{3313}{5327}$ inhabitants. Age—under 5 years, 932; from 5 to 10 years, 511; from 10 to 20 years, 360; from 20 to 30 years, 579; from 30 to 40 years, 732; from 40 to 50 years, 768; upwards of 60 years, 588. Nation—527 Germans, on a population of 384,748 inhabitants, or 1 on 730 inhabitants; 4,508 Poles on a population of 772,000 inhabitants, or 1 on 171; 292 Jews, on a population of 77,102 inhabitants, or 1 on 264. Religion, 4,596 Catholics, population 783,916, or 1 on 170; 439 Protestants, population 372,789, or 1 on 849; Jews as above. Residence, citizens 932 cases; country people 4,395 Class of society—upper class, 513 patients; lower classes, 4,814. Colour of the hair—in 5,033 cases, fair hair, 2,446; black hair, 998; dark brown, 1,049; grey, or white, 540. The seat of the disorder was in every case, except two, in the head; in 1 of the exceptions, the hair of the pubis was affected, and in the other the beard. The different varieties are plica mitralis 1,509 cases (attacks females especially); plica longicauda, 2,279; plica cirrhosa (curly) 1,233, which present themselves under the moist or dry form in the proportion of one of the former to 10 of the latter. In 5,109 cases, in which the year was noted, 586 took place in 1842; 858 in 1841; 460 in 1840; and 3,205 in the preceding years.

M. Diday, chief surgeon of the Hospital de l'Antiquaille, at Lyons, proposes as a preservative against the suppuration of buboes in cases of chancres, the division of the superficial lymphatic vessels of the groin. As soon as the glands of that region offer the least tumefaction, M. Diday seizes the skin, and introduces perpendicularly under the fold thus made, a narrow, straight tenotome, the edge turned inwards, and divides the parts, to the depth of 3 centimetres. In withdrawing the instrument, the edge must be turned outwards, and all the subcutaneous cellular tissue divided. Finally, the wound is closed by a bit of sticking plaster. This method, not having yet been tried, its merits or demerits cannot fully be appreciated.

The Geological Society of France announces that its thirteenth extraordinary sitting will take place on the 10th Sept. 1843, at 7 p.m., at Poictiers, department of the Vienne. The members of the society trust that all the amateurs of geology and natural history will meet them there; and assure them they will find an ample field for amusement and instruction in the ground to be explored. For further particulars application must be made to M. Maudayt, Conservator of the Museum of Natural History, Poictiers.

The receipts of the administration of the Parisian hospitals amounted in 1841-42, to 12,481,743 francs, 81 cents. (about £499,270,) notwithstanding several poor patients were refused for want of room. The numbers of the sick received from 1st. June, 1841, to 1st June, 1842, was 83,643; the time each individual remained in the hospital was on an average 25½ days; the number of beds is about 6000. A commission was appointed to point out the best method of obviating this inconvenience, and proposed diminishing the number of patients received in the public hospitals, by giving pecuniary aid to such families as are willing to keep their sick at home, but are compelled to send them to the hospitals because they have not the means of taking care of them, and by leaving to the charge of the department its own sick. Up to the present moment, all persons residing in the department of the Seine, are admissible into the Parisian hospitals, for which each inhabitant pays yearly the sum of 57 centimes (about 5½d.) whilst the Parisian pays 12 francs (about 9s. 7d.) By this plan there will be at least 2000 beds more per annum for the use of the sick. Last year the sum of 75,000 francs (about £3,000) was given to the Administration for the relief of the poor sick remaining at home, but only 14,000 francs (£560.) was distributed, and that to persons inscribed on the charity list.

Dr. Chappuis has just published the following curious case. A young woman, in a fit of grief, swallowed ʒv. of the oxydum arseniei album; taken immediately afterwards with violent vomitings. Dr. C. was called in; two grains of tartar emetic, in ℥ij. of water, were administered, which brought off a certain quantity of arsenic. ℥iv. of the hydrated peroxide of iron was mixed in a decanter of water, and the patient was ordered to drink freely of it. The vomiting continued, bringing off more arsenic. From half-past 1 p.m. to 4 p.m., she took at least lbij. of the peroxide. In the evening, an emollient phthisane was ordered, with ℈i. of nitras potassæ per pint. The next morning, an enema was given, containing more peroxide, and in the evening a purgative enema. The urine analysed on the second and fifth days, contained arsenic.

The author adds, that iron forms an almost insoluble compound with arsenious acid (arsenite of iron)—that the flow of urine is not stopped in cases of poisoning by arsenic—that the kidneys are the principal means employed by nature to eliminate the poison—that emollients and diuretics ought to be administered after an emetic and the antidote,—and that the peroxide of iron must be of a brick red colour; when it is of a yellow-orange, it ought not to be employed, because it then contains a certain quantity of the sub-sulphus ferri, upon which substance arsenious acid has no effect. The presence of the sulphate of iron is in consequence of the insufficiency of ammonia employed in the preparation of the peroxide.

On 31 amputations performed by M. Jobert de Lamballe. at St. Louis, this skilful surgeon only lost 7 patients. Of this number, 11 were amputations of the thigh, 5 deaths; 6 of the leg, 2 deaths; 4 partial amputations of the foot; 3 of the arm; 3 of the fore-arm; 3 amputations of the shoulder joint; and 1 resection of the olecranon. The amputations of the fingers were numerous, and invariably successful, though Professor Velpeau says the deaths are 1 in 3 or 4 patients, and considers it as dangerous, as that of amputation of the arm. The result offered by the foregoing table is far more favourable, than that presented by M. Malgaigne, who says that in amputation of the thigh, two-thirds of the patients die, and in that of the leg, one half. On 9 cases of amputation at the shoulder joint, M. Jobert de Lamballe lost only 2 patients.

The complications were frequent; the most to be feared, were hospital gangrene and erysipelas. In mild cases of the former, the wound was cauterized with the nitrate acid of mercury, or dressed with lint steeped in lemon-juice; in 7 cases, actual cautery was needed. In cases of the latter, as soon as the least redness appeared, the part was covered with simple ointment containing a few grains of nitrate of silver.

The method employed by M. Jobert de Lamballe in operating, is the flap operation; because, he says, it is performed more speedily, and with less pain to the patient. In the amputation of the leg (which he performs, if possible, just above the ancle) the posterior flap is the larger, the anterior descending only 2½ centimetres below the bone; by this method of operating, the cicatrix is situated on the anterior part of the leg, and the bones find under them a thick cushion formed by the posterior flap. All the above-mentioned amputations of the leg were performed after this plan, and the number of deaths seems to prove, that it is less dangerous than that performed in the ordinary place. The flaps are held together by means of pins and the twisted suture; and the different fluids flow freely out between the pins and at the lower part of the wound. After an interval of a few days, the pins are removed, and the wound kept united by strips of sticking plaster. Sometimes the inflammation created by the pins may threaten to destroy the parts kept in contact by the twisted suture; in such cases the pins must be removed, and it is rarely followed by any inconvenience, the adhesion being nearly formed. All the arteries, even the smallest, ought to be tied. The wound must be dressed the day after the operation, and after that the stump must be covered with cloths dipped in a cold decoction of the malva sylvestris.

Academy of Sciences.—Sitting of the 14th August.—Dr. Bailleul, Chief Surgeon of the Hospital of Bolbec, Seine Inferieure, addressed a letter on the treatment of variola confluens. It consists in the employment of lotions containing a chloruret, which, the author says, decomposes the purulent matter, prevents asphyxia, increases the vitality of the skin by the slight irritation it produces, hastens the cicatrization, but, above all, destroys the disagreeable odour which accompanies this disorder——thus rendering auscultation and examination of internal organs comparatively easy. It was employed by him for the first time, in 1838, during an epidemic of variola at Bolbec.

M. J. Barse, of Riom, sent in a memoir "*On the Copper and Lead contained in the Human Body.*" Two bodies, taken from one of the hospitals of Paris, were examined by Messrs. Barse, Follin, and Lassaux, and were found to contain copper and lead—the former was obtained in a metallic state, the latter was discovered by the different tests. The author says that he considers as normal, only such substances as are absolutely necessary, and without which life is impossible: now,

nothing proves that this is the case with copper and lead. He, however, affirms that these metals may be found in the human body, without having been introduced with intent to poison. Their presence can be proved by reducing the liver to charcoal.—1. By azotic acid, as proposed by Professor Orfila.—2. By fire.—3. By sulphuric acid. In the last method, the charcoal must be burnt, after the action of the acid, to cinders, otherwise the different tests will fail to denote the presence of the metals.

M. Soubervielle addressed a letter stating that he had succeeded in curing ulcers, supposed to be venereal, and which had resisted several mercurial courses, and were reputed incurable, by the application of the arsenical caustic. He, therefore, requests that a commission may be appointed to observe the effects produced by his method of treatment.

Academy of Medicine.—The sitting postponed on account of the feast of the Assumption.

GARLAND DE BEAUMONT, D.M.P.,B.L. & S.
Honorary Physician to the Spanish Embassy.

ON EMBRYOGENY, ANTROPODIMY, AND CYSTIDIMY.

Embryogeny has of late been an object of much anatomical investigation. M. Serres has, above all others, directed his attention with great spirit towards all that could throw light upon the most obscure points of this interesting branch of natural history. Delicate research into the structure of the first rudiments of organisation, profound views upon the origin, relation, and object of several of these elements, have led that able anatomist to the formation of a system, already almost complete, on the subject of the amnios, the bodies of Wolff, and the allantoid, and by a happy induction, have given us a satisfactory explanation of those cases of monstrosities, known under the term "antropodimy." M. Serres, it is true, does not in every instance agree with the results and opinions of other experimentalists; but he appears to unite in his favour, at least at present, the greatest amount of observed facts, as well as the most rational interpretation of these mysterious phenomena.

We will mention in a few words the principal points of this important question, as the best means of shewing its character and importance.

Most of the difficulties that at present surround human embryology concern the solution of this point, viz.,—is the amnios of the human ovum isolated from the body of the embryo, or does it, on the contrary, remain attached to it? This preliminary difficulty is very differently solved by M. Serres and his antagonists. All who have studied the subject appear at present to admit, that in birds this membrane results from a folding of the external layer of the *blastodermis*, which falls back in the shape of a fold or hood; there is also but one opinion, that the amnios of birds is a continuation of the circle of the umbilical opening. M. Serres also admits the truth of this opinion with respect to this class of vertebrate animals; but the learned anatomist refuses to admit a similar continuation in the amnios of man. In his opinion the amnios of the human embryo can exist independently of this embryo. M. Serres has established this independence by a series of proofs, which it would be tedious to re-produce, and he has confirmed it by an anatomical specimen, which appears to leave not the smallest doubt of this isolation in the human ovum. [On this ovum, though it has already remained four years in spirits, and has been yearly submitted ever since to the inspection of the professor's pupils, can still be distinctly seen the proofs that the embryo is situated apart from the amnios; that the embryo adheres to the amniotic vesicle towards the middle of the umbilical cord; in fine, that this independent vesicle of the embryo still contains a very large quantity of fluid.

The system of M. Serres is attacked upon this special point, by two kinds of arguments. It is opposed to him that analogy authorises us to admit that the amnios in mammifera and man, has the same relation as in other classes of animals; and, again, that an envelope of the fœtus, which in birds has the same function, and bears the same name as in the mammifera, is in one of these classes an appendage to the new individual, and makes in some manner an integral part of its organization, whilst in the other it has no tie of contiguity to it, but is completely foreign and unconnected. Observations of the development of embryos prove, on the other side, according to the antagonists of M. Serres, that the amnios of the mammifera accomplishes its evolution by the mechanism well known in the case of the amnios of birds—that is, that it is a continuation of the navel or skin of the embryo. Now, if the amnios of the mammifera acts in this way, why should the amnios of the human embryo form an exception? In fact, there exist, they tell us, preparations of the human fœtus perfectly normal, of the third, of the fourth, and of the fifth week, in which the umbilical cord, still very short, is formed by a canal, whose exterior "wall," evidently formed by a bending of the amnios, unites itself so manifestly with the general tegument or skin of the embryo, that it is impossible to distinguish the point, where the one commences and the other finishes. Such are the objections opposed by M. Coste to the principles held by M. Serres. We conceive that in the face of two opinions, which equally rely upon the testimony of facts, and the results of experiment, we may well hesitate to take a part. We cannot, however, forget, that the views of M. Serres have led to very remarkable results upon the entire class of deformities known under the name of "Antropodimy."

We will conclude our summary exposition of the actual state of the doctrine of embryogeny, by a short application of these interesting deductions to cystidimy.

Antropodimy is that kind of monstrosity which is characterised by a duplicity of individuals in the human species. This monstrosity, or rather this anomaly, for we are no longer permitted to use the former term, since the noble labours of anatomists (amongst whom we must make worthy mention of MM. Geoffroy St. Hilaire, father and son,) have laid down the precise law of the irregular development of organization; this anomaly it was impossible to account for by the pre-existence of germs, whilst it was readily explainable by the theory of epigenesis.

The duplicity of organs, whatever its nature, is, of course, reasonably accounted for on the same principle; and hence teratology now includes within itself all the facts known as to cephalodomy, (duplicity of head,) hepatodomy, and xiphidimy. But this doctrine, however satisfactory, could not as yet explain cases of cystidimy, or ischiadelphia, that is to say, anomalies in which the union of infants is effected by means of organs within the pelvis.

The cause of the impossibility appears to be (according to M. Serres) the too servile subjection of the doctrine of teratology, to the experimental method upon which epigenesis is founded.

On the subject of other dualities, teratology possesses all the data necessary to prove the real existence of the primitive duality of the divers parts which constituted it. But it is no longer so with cystidimy. Positive facts were wanting to establish the duality of the bladder and the duality of the uterus. The unity of these organs, at all the epochs of development, appeared a fact gained by science; insomuch so, that in the very presence of the organs which meet each other in cases of cystidimy, all that was affirmed, was that they were the result of a primitive disposition, the product of a monstrous germ, or, perhaps, the effect of accidental engrafting.

Now, M. Serres has cleared away all the difficulty with regard to this mode of explaining the facts, by establishing several propositions which have led him to a satisfactory explanation of all cases of cystidimy. They are these—1st, the bodies of Wolff originate in the median or vascular membrane of the blastodermis. 2d, the bladder and allantoid appear first on the lower part of the embryo, in the form of two isolated crescents, which give rise to the vesicle that extends beyond the limits of the fœtus, which it ultimately encloses. From this organ is derived the communication, that subsists between the internal and median membrane of the blastodermis, by the intervention of the intestines. Undoubtedly, human cystidima are invariably characterised by the existence of a complex bladder. The internal organisation of cystidima is altogether subordinate to that of the bladder. Around the latter, all the organs, within and without the pelvis arrange themselves; insomuch so, that when the vesical composition of these beings is once rigorously ascertained, that of all the other parts, however differing in appearance, naturally and necessarily flows from it.

Such, according to M. Serres, is the cause and organic conditions of the mode of association, in cases of cystidimy; they are conformable to those which produce cephalodima, xiphidima and hepatodima; and thus is completed in the views of the doctrine of epigenesis, that part of the natural history of man that concerns anthropodimy; and we add, that this satisfactory explanation was impossible so long as the origin of the "bodies of Wolff," and of the allantoid was not satisfactorily ascertained.—*Gazette Medicale.*

PLASTER OF PARIS FOR FRACTURES.

(To the Editor of the "Medical Times.")

SIR,—The practice of setting fractured limbs by encasing them in plaster of Paris, having been recently introduced into some of the London hospitals, and claimed as a modern discovery, I beg to forward you the following extract from a "Survey of the Turkish Empire," by W. Eton, Esq, published in the year 1798.

I am, Sir, your obedient servant,
COLOUGH.

17th August, 1843.

"I saw in the Eastern parts of the Turkish Empire, a method of setting bones practised, which appears to me worthy the attention of surgeons in Europe. It is by enclosing the broken limb in a case of plaster of Paris, which takes exactly the form of the limb, without any pressure, and in a few minutes the mass is solid and strong. If it be a compound fracture, the place where the wound is, and out of which an exfoliated bone is to come, may be left uncovered, without any injury to the strength of the plastic encasement. This substance may be easily cut with a knife and removed, and replaced with another. If,

when the swelling subsides, the cavity is too large for the limb, a hole or holes being left, liquid gypsum may be poured in, which will perfectly fill up the void, and exactly fit the limb. A hole may be made at first by placing an oiled cork, or bit of wood, against any part, where it is required, and when the plaster is set, it is to be removed. There is nothing in gypsum injurious, if it be free from lime; it will soon become dry and light, and the limb may be bathed with spirits, which will penetrate through the covering. Spirits may be used instead of water, or mixed with it, (or vinegar,) at the first making of the plaster. I saw a case of a most terrible compound fracture of the leg and thigh, by the fall of a cannon, cured in this manner. The patient was seated on the ground, and the plaster case extended from below his heel to the upper part of his thigh, whence a bandage, fastened into the plaster, went round his body. He reclined back when he slept, as he could not lie down. During the cure, when they saw matter or moisture appear through the plaster coating, they cut a hole with a knife to dress the wound, or let out the matter more freely."—*Eton's Survey of the Turkish Empire: chapter* 6.

THE "LAW OF PERIODICITY" QUESTIONED.

To the Editor of the 'Medical Times.'

SIR,—I beg leave to offer a few observations on a subject that is now proposed to the world under the above title. Certain parties are contending for priority of a discovery, but I can prove that their bone of contention is a very dry one, and that the pretended discovery is erroneous; therefore, the sooner it explodes into smoke the better.

The law of motion is a very interesting science; however, it is well known, that the motion of a body is the result of force exerted upon it by another agent in motion. If the propelling agent is regular in its motions, the body moved will be regular also, provided other obstructions do not intervene, but not otherwise.

It is easy to determine the "periodicity law" of the solar, planetary, and lunar revolutions; it is easy to determine the "periodicity law" of the tides and seasons, but the moment we enter the province of animal and vegetable life, we must leave our "periodicity law" behind us, as it can never be applied to such a fickle principle as life, until the laws of electricity, meteorology, and chemistry, are more perfectly developed.

Although we can determine the periodic recurrence of the tides, we can never determine the movements of a floating body thrown into the ocean, as it would have to observe several conflicting laws of repulsion, propulsion, gravity, &c. All animal movements are similarly subjected to very numerous and complicated moving agents.

If the laws of storms, of all animal movements, and all the movements of universal nature, were really discovered, meteorology, and the prognostications of the weather, would no longer be an uncertainty,—the *vis vitæ*, and all its functions would no longer be a mystery; in short, all past Newtons would be for ever obscured by such a great discoverer. If the powers of life, and its susceptibility to impressions and motions, could be accurately demonstrated, and laid down as a law by the rules of arithmetic and mechanics, such an inventor would found a first principle in medical science, but, alas! it is a philosopher's stone.

The gestation of animals is not always true to time, although the time of pregnancy observes a certain period; but before we can classify such a period within the confines of a law, it ought to observe an exact and determinate one, whereas it is well known that pregnancy is very frequently a fortnight, and often a month, later than its usual period of nine months. The following table of the periods of gestation in different animals, will shew the incongruity of the "law of periodicity," by the difference in the longest and shortest periods of gestation:

PERIODS OF GESTATION, ETC.

	Shortest period. days.	Mean period. days.	Longest period. days.	Difference.
Mare	322	347	419	97
Cow	240	283	321	81
Ewe and Goat	146	154	161	15
Sow	109	115	143	34
Ass	365	380	391	26
Bitch	55	60	63	8
Cat	48	50	56	8
Rabbit	20	28	35	15
Turkey	24	26	30	6
Hen	19	21	24	5
Duck and Goose	28	30	32	4
Pigeon	16	18	20	4

By the above table we see, that the law of vital periodicity, even in the function of generation, does not hold true to time.

The catamenia is subject to similar variations; in some females, it occurs every fortnight; in others, every three weeks; in others, every five or six weeks, though the general period is one month; yet even menstruation cannot be colligated in the law of vital periodicity.

Sleep, hunger, respiration and the pulse, can never be made to accord with any general law of periodicity: accidental circumstances, habit, &c. will always be found to interfere with the common law of vitality.

The periodic paroxysms of ague have not yet been satisfactorily accounted for; it is certain, however, that they cannot be accounted for on the principle of time, because the paroxysms are frequently at fault with regard to time, occurring earlier or later, though sometimes they are wonderfully exact.

The paroxysms of other fevers, and several modifications of nervous disorders, evidently shew signs of a "law of periodicity," but the law is inconstant; therefore, however infatuated we are for discovering the law, we may as well leave it off, for there is none. Every vital movement is regulated by circumstances; how, a mere stimulus to the eye, or ear, or touch, or mental recollection, will put all the vital movements in an uproar!

The critical days of Hypocrates, can never be brought forward to demonstrate a law of periodicity, because they are not deserving of implicit reliance, as every practical observer of fever can testify; consequently, of what value is a system, if its first principles are erroneous?

The subject of periodicity, as a natural phenomenon, ought to be respected, observed, and studied; however, the writer hazards the presumption, that it can never be reduced into a demonstrable law or system.

As to the fixing of a physiological, pathological, and meteorological day at 12 hours, it is evidently a mere theory, for seconds, minutes, and hours, are but artificial divisions of time, without any foundation in nature. A day and night, a lunar week, a lunar month, and a solar year, are the only natural divisions of time.

If the atomic theory, in chemistry, happens to be a grand discovery, that is no reason why the unit and multiple system should be applied to motion and time, in physiology. It is very easy to theorise on units and multiples, and, provided the units are fixed low enough, such as seconds, the multiples may be adapted to any period; for instance, my pulse is *one* in a *second*; and if I fix these two coincidents of motion and time as the standard or unit of my vital periodicity, and suppose I have a paroxysm of some diseased action every twelve hours, my new law or system would tell me, that 720 pulsations, form the periodicity of my disease: such an explanation would prove nothing, would teach nothing; for the pulse is variable, the vital principle itself is very fluttering and inconstant, and we have seen before, that the paroxysms themselves are not true to time; consequently, the pretended discovery of a law which regulates all the movements of universal nature, is an infatuation.

Hoping the foregoing observations may lead to an investigation of the truth, and also cause Dr. Laycock and Dr. Dickson to become friends, and mutually to regret having claimed priority to a shadow,

I beg to remain, Sir,
Your most obedient humble servant,
CYMRO.

Aug. 15th, 1843.

[We consider this letter entitled to admission on the clear ground, that it raises a perfectly different question to the one discussed between Drs. Laycock and Dickson. It is neither the same nor a *personal* controversy.]—EDITOR.

UNIVERSITY OF LONDON.

Bachelor of Medicine.—Examination for Honours, 1843.—*Thursday, August* 17.—*Morning,* 10 *to* 1,—*Anatomy and Physiology.*—Examiners, Mr. KIERNAN and Prof. SHARPEY.—State the dissection required to expose the glosso-pharyngeal nerve and its branches after its exit from the cranium; commencing at the integuments, and describing the several parts brought into view in the dissection. The tympanic branch of the nerve not to be traced.

Batchelor of Medicine.—Examination for Honours,—Thursday, August 17.—*Afternoon,* 3 *to* 6.—*Anatomy and Physiology.*—Examiners, Mr. KIERNAN and Prof. SHARPEY.—1. A line being drawn round the arm two inches above, and another two inches below the bend of the elbow, describe the soft parts seen in dissecting the included portion of the limb, both before and behind, in the order in which they appear. The joint not to be described.—2. Give an account of the structure and mode of distribution of the capillary vessels in general, with the differences they present in respect of size, number and arrangement in different textures, and in the same texture at different periods of life. What evidence can be adduced for, and what against the existence of colourless capillaries?

Bachelor of Medicine.—Examination for Honours,—Friday, August 18.—*Morning,* 10 *to* 1.—*Chemistry.*—Examiner, Prof. DANIELL.—1. What are the analogies which subsist between Light and Heat? Why, in a bright winter's day, is the snow melted around a leafless shrub or a post, whilst it is little affected by the direct rays of the sun?—2. What do you mean by *Specific Electric Induction*?—3. State Professor Ohm's theory of Voltaic force and resistances; and apply his formulæ $E—R+r=A$ and $n\ E—n\ R+r=A$. to the explanation of quantity and intensity in the Voltaic Current.—4. To what is the (so-called) *polarization* of the plates and electrodes of a Voltaic Circuit to be ascribed; and how may it be prevented?—5. Describe the principal phænomena of Magneto-Electric Induction.—

6. Describe and exemplify the character of *Monobasic*, *Bibasic* and *Tribasic* acids.—7. What is Professor Graham's view of the constitution of *Double Salts*?—8. Draw a parallel between the principal compounds of Ethule and Methule.—9. What would be the products, carefully collected, of ten grains of Tartrate of Silver (T+2 AgO) burned with Oxide of Copper; the silver to be determined by a separate experiment.

Bachelor of Medicine.—Examination for Honours,—Friday, August 18.—*Afternoon*, 3 *to* 6.—*Materia Medica and Pharmaceutical Chemistry.*—Examiner, Dr. Pereira.—1. How is the presence or absence of Copper in Oil of Cajuputi to be ascertained? If powdered Rhubarb were adulterated with powdered Turmeric, by what chemical test would you detect the fraud? By what chemical means would you determine the absence of Poppy Oil in a given sample of Castor Oil?—2. Describe the microscopic appearances of Starch-grains, and point out by what characters you would detect the presence of Potato-starch in West India Arrow Root, illustrating your answer by a sketch of the shapes, &c. of these two kinds of amylaceous grains.—3. Describe the mode of preparing the *Antimonii Oxysulphuretum*, Ph. Lond.; explain the chemical changes which attend the process; and state the composition of this medicine.—4. Describe the effects and uses of Arsenious Acid; and especially point out those symptoms which are apt to follow the long-continued medicinal employment of this substance. State what remedies you would resort to in a case of acute arsenical poisoning.—5 Enumerate the principal purposes for which cold is employed as a therapeutical agent.—6. Describe the botanical characters and medicinal qualities of *Ranunculaceæ*.—7. Name the substances respectively numbered 1, 2, 3. 4, 5, and 6.

Bachelor of Medicine.—First Examination, 1843.—*Examination for Honours: the names are arranged in the order of proficiency.—Anatomy, Physiology.*—Alfred Jackson, (Exhibition and Gold Medal,) University College; Benj. Lancaster Jemmett, (Gold Medal,) King's College; James Hakes, University College; Peter Redfern, Queen' College, Edinburgh; Benjamin Magor Eyre, University College; Nicholas Henry Littleton, University College.—*Chemistry:* James Hakes, (Exhibition and Gold Medal,) University College; Benjamin Lancaster Jemmett, King's College; Nicholas Henry Littleton, University College.—*Materia Medica and Pharmaceutical Chemistry:* James Hakes, (Exhibition and Gold Medal,) University College; Peter Redfern, (Gold Medal,) Queen's College, Edinburgh; Benjamin Lancaster Jemmett, King's College; Alfred Jackson, University College; Nicholas Henry Littleton, University College.

UNIVERSITY OF ST. ANDREW'S.

The Senatus Academicus of the University, on Tuesday, the 1st August, after a strict examination, conducted by their professors of medicine, chemistry, and humanity, assisted by Dr. Robertson, of Edinburgh, and Dr. Hannay, of Glasgow, conferred the degree of Doctor of Medicine on the following gentlemen:—Jarritt Irwin, Carlow, Ireland; John Scott, Tyrone, Ireland; William L. Meredith, Cove of Cork, Ireland; Edmund Dale, London; Charles D. Finch, Kent; Frederick C. Finch, Kent; Joseph K. Carey, Newport, Tipperary, Ireland; Henry Huish, Hampshire; Edward D. Doyle, Kilkenny, Ireland; John H. Gray, Manchester; Nathaniel Buckley, Rochdale; P. G. Stewart, Perthshire; William F. Merson, Tiverton, Devon; John Spencer, London; Patrick B. Hislop, Glasgow; Charles M'Kay, Kilrea, Ireland.

(Four other candidates for the degree had their final examinations delayed till next graduation in May.)

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of Gentlemen admitted Members on Friday, Aug. 18th, 1843:—

H. S. Wharton, E. H. Ambler, J. A. Poole, J. T. S. Jolley, H. F. Coles, D. Davies, J. Beedall, P. Redfern, B. S. Tallan, C. M. Wayte.

PERISCOPE OF THE WEEK.

British and Foreign Medical Review; Lancet; London and Edinburgh Medical Journal; Edinburgh Medical and Surgical Journal; Annales de la Societe de Medecine d'Anvers; Oester. Med. Wochenschrift; Hufeland's Journal; Transactions of the Royal Society of Edinburgh; Archives de la Medecine Belge.

Adhesions Between the Pia Mater and Brain.—The adhesions found between the pia mater and brain are of three kinds, according to M. Fardel; they are produced by, first, a sort of viscosity poured out between them, when no actual liquid is interposed between them, as in cases of compression of the brain and flattening of the convolutions; secondly, the vessels passing from the membranes into the brain; thirdly, old, or recent cellular adhesions. M. Fardel appears to have paid attention to a point concerning which much difficulty is frequently experienced at *post-mortem* examinations, the natural amount of adhesion of the membranes to the subjacent brain at the different points of its surface. He thinks it may be established as a general proposition, that when the examination is made within forty hours after death, and the temperature not very high, (under 77 deg. Fah.) erosion of the surface of the brain, produced in removing the pia mater, is a morbid phenomenon. Cases in which putrefaction has advanced with very notable rapidity are of course to be excepted; and M. Fardel would except from the mass of the brain, under all circumstances, the convolutions of the middle, and sometimes of the anterior lobe, the natural softness of which renders the separation of the meninges extremely difficult. The meninges are generally easily removable over the convex and lateral surface of the hemispheres; some difficulty, however, is met with in detaching them at the union of the upper and internal surfaces of each hemisphere. The firm and narrow convolutions forming the posterior points of the hemispheres are so closely united, that serosity is never found infiltrated between them; the removal of the membranes is consequently very difficult here, for, generally speaking, the facility of removal is directly as the quantity of serosity in the pia mater.

Inflammatory Congestion of the Brain.—Inflammatory congestion of the brain is anatomically characterised in the grey substance by uniform pinkish discolouration: in the white substance by punctiform red injection, and sometimes by patches of reddish staining.

Fibrous Tumour of the Uterus.—Dr. Ingleby, of Birmingham, was called in to see a lady, 40 years of age, recently married, and then pregnant, who had a tumour in the abdomen, of some fifteen months duration. When he saw her, besides the symptoms of general derangement, and the sleep being disturbed by attacks of a suffocating character he found the abdomen on the right side of the mesial line, from the brim of the pelvis, to a distance of at least three inches above the umbilicus, occupied by a large and firm tumour, the surface being raised at this part considerably beyond the level of the surrounding parts. From its summit or centre, the tumour took a sloping direction towards the mesial line, where it seemed to lose itself, and to pass insensibly into a diffused and moderately elastic swelling on the left side, under which could be distinguished the movements of a fœtus. Another hard tumour, of an irregular shape, apparently about a third of the size of the first, and evidently possessing similar characters, was felt on the upper part of the semi-elastic swelling. The vagina was narrow, and painful to the touch; a long and hard tumour descended behind it, from the brim of the pelvis, posteriorly nearly to the coccyx, its narrow end being downwards. The os uteri, which was almost close to the symphysis, was rather soft, and sufficiently open to admit the point of the finger; and there was barely room for a finger to lie either between the os uteri and the symphysis, or the os uteri and the tumour. The cervix uteri was preternaturally long and flexible. On the left side of the pelvic brim the space was quite filled up, but on the right side there was less compression, owing doubtless to the large tumour having risen above the brim, and the gravid uterus being less closely packed within the brim at this part. The existence of pregnancy having been clearly ascertained, and the character of the diseased growth, being regarded as the common fibrous tumour of the womb, the question arose as to the propriety of inducing premature labour, which was ultimately decided against, on account of the difficulty of the operation, the cervix uteri having acquired a great increase in length and having a curved direction, while it was doubtful, if the rupture of the membranes could be accomplished, if the child could pass, there being only an inch and a half of space between the pubic bones and the tumour, which was immovable. The risk of the presentation proving preternatural, and the uterus rupturing, was not to be overlooked. Parturient action commenced about a fortnight afterwards, and continued increasing and exhausting the patient for five days, when the fœtus was expelled, the poor mother surviving its birth about twenty-four hours. On laying open the addomen, at the *post-mortem* examination, the large tumour came into view. It was partially adherent to the peritoneum, which lines the abdominal muscles. It was attached to the uterus somewhat behind and above the right Fallopian tube, by a small pedicle about an inch in length, and as thick as the thumb. It was kidney-shaped, presented a mottled colour and a variable density, and on making a section of it, a portion, corresponding to about a fourth part of the mass, had undergone marked softening, whilst the other part of the cut surface was very firm, and without cavity. There was no cartilage in the structure of any of the morbid growths. This tumour measured 7½ inches in its longest diameter, 4 in breadth, and 4 in depth, and weighed three pounds and two ounces. The other tumour was attached to the right of the fundus. It was nine inches in circumference; it had a leaden hue, weighed about 9½ ounces, and measured 4½ inches long, and 3 in width. Its cut surface presented a firm, white, homogeneous appearance. The pelvic tumour possessed nearly the same characters as the others. It was attached to the left side of the body of the uterus on its anterior and lateral surface, was pyramidal in shape, 4½ inches long, 9 in circumference, and weighed 7 ounces. The pe-

dicle was an inch and a half long, and three and a half in circumference. The uterus was studded with small sized fibrous tumours. The ovaries were healthy.

Calculi in the Gall-Bladder.—Margaret Higgins, 46 years of age, was admitted into the infirmary under Dr. Henderson, having on the right side of the umbilicus, about three fingers' breadth from it, a solid mass of a rounded form, but irregular or knotted on the surface, and about the size of a small orange. A similar indurated mass extended up towards the hypochondrium. The former was formed by a collection of indurated fœces in the colon, and on its being removed by proper medication, what seemed a process or prolongation of the globular tumour, extending towards the hypochondrium, was in reality firmly attached to the under surface of the liver. It projected about an inch and a half below it, the lowest point being on a level with, and about four fingers' breadth to the right of the umbilicus, being nearly on a line with the anterior extremity of the eleventh rib. It measured nearly an inch and a half across, was very irregular on its surface, and presented several angular prominences, whose relative position could be changed by pressure with the fingers in opposite directions. Its connection with the liver was fully proved. Higgins had been previously subject to severe spasmodic attacks of pain in that part, and for the last six years to less severe uneasiness in the same situation. The patient was also jaundiced. The situation and general character of the tumour led Dr. Henderson to conclude that it was formed by the enlarged gall-bladder, containing biliary calculi, which opinion was confirmed by the *post-mortem* examination, when the gall-vesicle was found to be considerably thickened, and partially sacculated, and contained five calculi, and some greyish fluid of the consistence of pus. The head and middle of the pancreas, and part of the liver, was carcinomatous.

Value of the Microscope.—Dr. Bennett describes a case in which all the symptoms of acute softening of the brain were present, and in which, consequently, the viscus was carefully examined after death. When the lateral ventricles were opened, it became a question whether the right corpus striatum was softened. Several persons applied their fingers, and endeavoured to ascertain the point, the pressure exerted by each successive finger diminishing the normal consistence of the part, until at length it presented the appearance of pultaceous softening, which it was considered to be. When the pons varolii was bisected, Dr. Peacock thought it was softened, an opinion from which others differed. The symptoms pointed to softening of the pons varolii, and were not explicable, by the supposed state of the corpus striatum. The microscope was then sent for, and it was demonstrated, that the corpus striatum did not contain any exudation corpuscles, whilst they were very abundant in the pons varolii.

The Exudation Corpuscle.—Dr. Bennett thus describes the physical properties and mode of formation of the exudation corpuscle. Direct pressure causes large drops like oil to appear within the cell-wall, or to exude through it. By friction, the granules of which it is formed may be dispersed. From this, as well as from the effects of chemical agents, it would appear, that oil enters largely into their composition. The exudation corpuscle is formed like all other primary cells; a nucleus is produced, from which a cell-wall arises. During, or subsequent to its full growth, granules are formed between the nucleus and cell-wall. These become more and more numerous, until at length the nucleus is observed, and the whole cell appears full of, and distended with, granules. In this state, it has reached its full growth; the cell-wall bursts, and its contents escape. This process going on simultaneously in common corpuscles, causes the coagulated exudation to become soft, pultaceous, or even diffluent. It is in this manner that inflammatory softening is produced.

Asphyxia nearly induced by a Nasal Polypus.—A girl, 13 years of age, who had a large polypus growing from a pedicle from the septum narium, immediately above the uvula, had it forced into the mouth during a fit of coughing, where it produced exceeding dyspnœa, threatening suffocation, and at the same time the patient lost all power of swallowing or utterance. A ligature was thrown around the pedicle, and the mass removed on a level with the velum palati. The patient was immediately relieved.

Hydrocyanic Acid not Immediately Fatal.—A hypochondriacal gentleman, well advanced in years, one morning swallowed an ounce and a half of cherry-laurel water, which he had long kept by him for the purpose of committing suicide. Symptoms of poisoning did not make their appearance until after the lapse of three hours. When questioned as to the cause of his illness, he made no secret of what he had done. The first symptoms were paralysis of the hands and feet, and also of the muscles which support the head, which fell forwards on the breast, and could not be raised by the patient. The contents of the bowels and bladder were passed involuntarily. The extremities, though motionless and cold, were not insensible; the pulse was small—the voice hoarse, but distinct. The intellect was perfectly intact; the patient remarked with satisfaction the continually increasing weakness, and died in the evening calmly, in consequence of paralysis of the muscles of respiration.

The Bebeeru-Tree of British Guiana.—The bark of this tree occurs in large flat pieces, one to two feet long, and varying in breadth from two to six inches. It is about four inches thick, of a cinnamon-brown color, without aroma, pungency, or acrimony, but a strong persistent bitter taste, with considerable astringency. It contains two distinct alkaloids, one called bebeerine, the other sipeerine, and a crystallizable diliquescent organic acid, which appears to differ from all known vegetable acids, and to which Dr. Maclagan has given the name of bebeeric acid. Bebeerine in mass or powder is opaque; in thin layers, it is in the form of a transparent yellow shining film. Its taste is strongly and permanently bitter, with a slightly resinous flavor, and it evolves feebly a corresponding odor, when united with sulphuric acid. It is soluble in five times its weight of absolute alcohol, and also in rectified and proof spirit and ether, but very sparingly so in water. It forms soluble uncrystallizable salts with sulphuric, hydrochloric, and acetic acids, but nitric acid decomposes it, converting it into a substance somewhat analogous to carbazotic acid. Sipeerine is of a dark brown shining aspect. It forms uncrystallizable neutral salts with acids. Pure bebeeric acid is white, and beautifully crystalline. It rapidly diliquesces; fuses at 300 deg., and at 400 deg. sublimes apparently unchanged. The sulphate of bebeerine has been tried at Demerara, with marked success, in the treatment of intermittent fever. Dr. Maclagan has likewise tried it in some cases of ague, and also in periodic headache, and the results obtained were such as to leave no doubt as to its anti-periodic powers. Dr. Maclagan believes Dr. Warburg's fever drops to be a tincture of bebeeru, probably from the seeds. His opinion is formed from chemical analysis Dr. Prittchett, who tried these drops in Africa, considers them to be a compound of *morphia and quinine*.

Transudation of the Saliva through the Cheek and Temple.—Dr. Roelants, of Rotterdam, describes a singular and interesting case, occurring in the person of an old man, 82 years of age, who had an attack of fever in November, 1836, which terminated by an enormous critical abscess, occupying the parotid region, the right cheek, as high as the lower eyelid, and part of the neck. This abscess, after several days, pointed *vis-à-vis* the last molar teeth, and behind the angle of the lower jaw, at both which places, it was freely opened by Dr. Roelants, discharging a large quantity of pus, which shortly made a way for itself by the external auditory meatus. In the following February, a hard body, as long as two-thirds of the finger, and about an inch in length, came away, by the opening made below the ear. Dr. Roelants did not see it, but he believes it was Steno's duct, with part of the parotid gland. The discharge gradually diminished and ultimately ceased after this. Some time afterwards, while Dr. Roelants was attending some other member of the family, he was informed, that his patient had had a most serious inconvenience, ever since his last illness: whenever he masticated food, the right cheek became moist, and perspired freely. When not eating, all appeared as usual, except that the right cheek was rather more red than the other; but, on the first contraction of the masseter muscles, the color instantly deepened, and the entire surface of the right side of the face, from the upper part of the temporal bone to the lower edge of the under jaw, became covered with moisture, which, in a few minutes, fell in large drops from the cheek on the neck. This state continued while mastication was going on, and was generally greater during breakfast, or when the patient filled his mouth very full: it was less when he partook of liquid food. It was sometimes so abundant as to soil the dress, so as to necessitate its being changed. Neither the cheek nor the temple were ever thus moistened, save when food was taken. A careful examination of the face shewed a deep depression behind the right angle of the lower jaw, to which there was not a corresponding depression on the other side. There was also a cicatrix two inches and a half in extent on the right cheek, the upper part of which was exactly where Steno's duct traverses the buccinator muscle. The fluid thus covering the right side of the face at meal-time, could be no other than the saliva, and its appearance must be attributed to the injury done to the parotid and to Steno's duct. Dr. Roelants is of opinion, that the right parotid gland is quite destroyed, and that a supplementary capillary net-work has been formed in the cheek, in which an infinite number of small vessels terminating in an equal number of secretory ducts, constitute, if not a new gland, at least a glandular apparatus, which, by its structure, may perform the function of secretion. The only error seems to be, that the secreted fluid, instead of being poured into the mouth, is effused uselessly on the external surface of the cheek and temple.

Preparation of Morphia.—M. Michiels,

of Antwerp, advises the following process for preparing the hydrochlorate of morphia. He obtained by it ten ounces more of the salt from 50 kilogrammes of opium, than he would have procured by Gregory's process. Ten kilogrammes of opium are treated with a sufficient quantity of cold water by the displacement method. The opium having been exhausted, and the solution filtered clear, it is concentrated at a moderate heat, until about eight quarts only remain, when a slight excess of a concentrated solution of the chloruret of calcium is to be added. The mixture having been heated for an hour, at 175 deg. Fah., and continually stirred, the meconate of morphia is totally decomposed, and a white precipitate of meconate of lime takes place, which can be separated by filtration. The liquid is then passed boiling over purified animal charcoal,—then concentrated, and a large excess of hydrochloric acid added, by which a confused crystallization of hydrochlorate of morphia, and codeine is very soon obtained. The salt is collected, and pressed. As it is impossible to obtain all the morphia from the syrupy mother-water by a second crystallization; it must be diluted with water, and boiled, when the morphia may be precipitated by ammonia diluted with water. This morphia, previously washed, is saturated with diluted hydrochloric acid, and added to the salt previously procured. The whole is then decomposed by ammonia, which precipitates almost all the morphia, leaving the codeine, and some morphia in the solution. The precipitated morphia is then saturated with diluted hydrochloric acid, when the narcotine will be separated, unless an excess of acid be used; after which, the liquid having been filtered, and a large excess of hydrochloric acid added, the morphia will speedily crystallize. The collected salt is submitted to the press, and about 3-4ths of a pure white salt will be obtained. The mother-water is again precipitated by ammonia, as at first, and the same process of crystallization is adopted. It is so speedy, that it can be practised several times in a day, whereas, previously, a day was required for each crystallization. If other salts of morphia are required, the solution of the hydrochlorate must be decomposed by diluted ammonia.

Success of Arsenic in Syphilis.—Dr. Sicherer, of Heilbrunn, cites the following case:—A lady having become affected through her husband with the virus of syphilis, had at length passed through the various stages of that disease until about to sink under final marasmus. The palate and the organs of deglutition were destroyed to such an extent that scarcely any liquid could be swallowed, and then only in a recumbent position. As a forlorn hope (for other remedies had been unsuccessfully employed), Sicherer had recourse to arsenic, ordering Fowler's solution to be taken, at first, in doses of two drops, but gradually increased to thirty drops, three times a-day. The remedy was continued until about two ounces of the arsenical solution had been taken, by which time a considerable portion of the impaired structures had been restored, and the faculty of deglutition regained; and after a period of ten years no relapse had been experienced.

Continental Treatment of Neuralgia.—Dr. Schleiser, of Peitz, has prescribed, with success, to patients with abdominal neuralgia, but whose circumstances would not permit of their visiting a watering-place, the use of an artificial mineral water, resembling that of Eger, in Bohemia, and made as follows:—℞, Filtered spring-water, a pint; diluted sulphuric acid, two drachms and a half; hydrochloric acid, twenty drops. Mix, and add bicarbonate of soda, forty-five grains. The bottles are then to be sealed up without delay, and kept cool; one or two pints may be drunk daily. In hepatic neuralgia Dr. Schleiser depends much on the effects of belladonna; in cases where great irritability of the stomach is present, he finds nitrate of silver suitable, combined with morphia.

Morphia has been an ordinary remedy for neuralgia, the cure of which it may, in certain cases, effect; but a French practitioner, M. Rougier, has advised the adoption of an ingenious method, which he says will prove the completeness and permanence of the cure. After the apparent removal of the disease by the morphia, he administers successive small doses of strychnia, gradually increasing the amount of the doses and abridging the intervals between them. Now, if the cure have been complete, the tremors and other characteristic effects of the strychnia go on diminishing in intensity from the first, notwithstanding the increasing strength and frequency of the doses; but if otherwise a contrary result happens, and the effects of the strychnia increase in intensity.

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No. 206. Vol. VIII. LONDON, SATURDAY, SEPT. 2, 1843. PRICE FOURPENCE. Stamped Edition 5d.

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SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE XI.

1. *Condition of the stomachic and intestinal surfaces unfavorable to the digestive elaboration of the aliments.*—If, from the influence of any physical or mechanical cause, the capillary vessels of the lymphatic circulation,—a circulation or system which is peculiar to the surfaces of the alimentary canal, give passage to the sanguineous fluid, the function of these surfaces will be changed; they will participate, in consequence of the afflux of blood, in the nature of respiratory surfaces; their new faculty of respiration will destroy and paralyse their characteristic faculty of absorption; fever will take the place of digestion; and the animal will be exhausted as well from the excess of the one function, as from the more or less complete absence of the other. If, on the contrary, it happen, from whatever influence, that the intestinal fibrillæ assume an unusual development, that the surface of the stomach itself becomes covered with those parasitical vegetations, commonly known under the name of *sordes, mucosities* or *gastric accumulations*, there will then exist, between the food and the digestive surface, an obstacle, which will prevent the contact, without which elaboration is impossible, and which, acting as a varnish or impervious covering, will transform the mucus of the digestive passages into a simple inert or protective layer. The animal pines away; it is not allured by the most savoury food; if it touches it from habit, it turns away disgusted; the taste is lost in consequence of the impotence of the digestive function.—Fasting quickly induces lassitude, and the lassitude adds to the inappetence; the pulse is feeble and scarcely perceptible; the moral faculties are depressed; sensibility is blunted; the animal decays, by a slow agony; it dies in fine from abstinence, without having experienced the symptoms of hunger.

A sedentary life, especially when succeeding to a life of excitement and activity, is very apt to interfere with the process of digestion, to render it slothful and imperfect, and to induce that condition which sooner or later leads to one or other of the foregoing maladies. In fact, man is, physically considered, one of those species of animals, in which the body has been organised with a view to motion, as the polypus is for a state of isolation. Motion assists all the functions and the actions of the human body; muscular exertion gives, to the circulation, an activity of impulsion which seconds in a remarkable manner the activity of the organs; it disengages caloric, and thus maintains the vital heat. Heat accelerates exhalation, by the vaporization of the liquids; the elaborating cells, expiring and exhaling with a greater degree of energy, in like manner inspire and absorb with renewed activity, these functions being constantly regulated in their action, the one by the other. Now, we must bear in mind that the circulation is the result of these two opposite, though almost simultaneous, functions. Another effect of muscular action, which has been but little noticed, is that it assists in directing, towards the duodenum, the alkaline products of the elaboration of the liver,—products without which the duodenal digestion is unable to transform, into the chyle destined to sanguification, the chyme transmitted to it by the elaboration of the stomach. If the flow of these products be interrupted, digestion is either suspended, or else it is rendered incomplete; the stomach digests without profit to the body, a condition which is soon attended by pernicious results. A state of inaction, when too prolonged, benumbs the limbs, blunts the imagination, stupifies the head, represses the appetite, predisposes to oppression of the heart and of the chest, and also to sick head-ache; for the circulatory liquid is no longer properly regenerated, but conveys, for the aspiration of the tissues, only the products and refuse of expiration; the intestines become distended and inflamed, for the gases disengaged from the fermentation of the stercoraceous matters are either rejected by the tissues, inasmuch as they are not capable of assimilation, or else if they do become assimilated, they lead to the disorganization of the part. In fact, motion is a necessity, which cannot be dispensed with, without detriment to human life. That man who lives only in his study, and whose solitary movement consists in turning over the leaves of his books, is one who destroys himself, at the same time that he acquires but little knowledge. For what can the mind do, when the body is weak? Does not the thought, whatever may be its essence, emanate from the elaboration of the brain?

Experience shows that frictions, exercised upon the regions of the liver and of the pancreas, supply the place of gymnastic exercises, by facilitating or by re-establishing the passage, into the duodenum, of the products of the gall-bladder, and of the hepatic and the pancreatic viscera. There are some positions of the body capable of keeping the orifices of the pancreatic and hepatic ducts, in a state of occlusion, thus forming an obstacle to the escape of the liquids elaborated by these two subsidiary organs of the duodenal digestion. These positions, if habitual, may become causes, by privation, of disease and of death. We recommend this to the consideration of those men, calling themselves philanthropists, who are so fond of inflicting corporeal punishment, under the name of justice, upon their fellow-creatures. The position upon all fours, so suitable to the digestion of quadrupeds, especially to the dog, may produce death in the human species, to which the prisoner, as well as the philanthropist, has the honor to belong.

2. *Privative causes of disease, as relating to the quality and the quantity of nutritive substances ingested into the stomach.*—We understand, as we have previously said, by nutritive substances, those vegetable and animal bodies, which combine at least the two elements necessary to saccharine, alcoholic and acetic fermentations; these two elements are, the saccharine or saccharifiable substance, and the glutinous or albuminous substance. There is not a single body, among the number of those upon which the largest, as the smallest being, exists, in which analysis does not show the presence of both these substances at the same time. Attempt to feed any animal whatsoever, upon one or other of these substances only, and you will starve it. This principle once laid down, it is easy to admit, as a general rule, that there is not a single vegetable or animal substance, administered in its pure state, which is not nutritive, provided it does not combine this quality with a poisonous action; for there is not a being, even in the vegetable kingdom, which can become developed, without elaborating and reproducing these two elementary principles, from the combination of which results nutrition, a process of which all the other functions are but the transformation. That which we have said of vegetables is a law of still more universal application in animal life; for it is doubtful whether there exists a living animal, in its normal condition, of which the flesh is in itself poisonous; their flesh becomes poisonous only when the animals have themselves been poisoned.

Art alone furnishes us with *non*-nutritive substances, which it extracts from vegetables and from animals; for, extraction is isolation. Now, when two things derive their qualities from their association only, their isolation must destroy them. To feed animals, with substances produced by art, is very frequently to load their stomachs, while leaving them to die of hunger. Every nutritive substance, in general terms, is not of necessity alimentary, to each individual being. The *nutritive substance* is that which combines, in whatever proportions, the two elements of the saccharine fermentation, with an excess of gluten or of albumen, which afterwards enables the alcoholic to pass into the acetic fermentation. The *alimentary substance*, on the contrary, is a nutritive substance, which contains the two elements necessary to this fermentation, in proportions and in a state of mixture, or in a direction, if I may so express myself, which is favorable to the elaboration of the digestive organ in any given animal. The mulberry leaf, for instance, furnishes aliment to the silk-worm, though not to the caterpillar or young of the *bombyx cossus*, which lives on the trunks of our elms; the woody fibre, on which this caterpillar is nourished, does not constitute food for beasts. Unless a special restriction be added, we understand, by an alimentary substance, a nutritive substance, on which man may feed with benefit and in a normal manner. The indigestible substance is a nutritive matter, which is alimentary only in a feeble degree; it does not furnish sufficient for digestion, and consequently it gives rise to a state of suffering and disease in the organ and its dependancies.

From what we have just said, it follows that the nutritive substance is not alimentary in an equal degree for all animal species, and that a given substance, though alimentary for one individual, may be indigestible to another of the same species. This depends on a simple modification, in the elementary structure of the walls of the elaborating cells, of which the tissues of the alimentary canal are composed. If I were asked to give a rough explanation of the mysterious and invisible organization of these admirable, small *matrices* of nutrition and of development, I should be tempted to answer this question, by the following:—How is it that a given molecule, which is arrested in its passage by one sieve, shall pass freely through the orifices of another? We may conceive, in fact, that the dimensions of the elementary globules, which, touching one another by six points of their circumference, form the web and tissue of the elaborating cell, that these dimensions, I say, should be variable in different individuals of the same species; that their interstices should, in their turn, vary in the same proportions; and, that, consequently, in the one, they will admit and aspire liquid or gaseous molecules, which will become checked in their passage, in another individual of the same species. Do we not know that the same liquid which passes through filtering paper of one quality, is unable to traverse paper of another kind. Do we not also know that the crack in a bottle, which allows the escape of ether, would retain hermetically a gas of a different nature? This simple comparison will suffice to make us understand that the differ-

ences, in the results of nutrition, depend only on the differences in the accessory conformation of the animal membrane; and that this conformation, varying on a large scale from one species to the other, and on a less extended scale from one individual to another, may also vary in the same individual, according to age, season, change of habit and of climate; insomuch that a given substance, indigestible at one time, may become alimentary at another, and *vice versa*. We thus see individuals at one time covet that which they used to loathe, and reject that which, previously, used to be regarded by them as a dainty; for the taste, if not depraved from some abnormal cause, is the advanced sentinel of the digestive organ; it is the expression of its wants conveyed by means of its desires.

What we have said of the nutrition of animals is equally applicable to that of vegetables, if we bear in mind that their radicular surfaces are, in every respect, analogous to the intestinal surface of the animal; and that the manure, in union with the earthy bases, fills the place of aliments. The stomach of the vegetable is on the exterior of those organs which are placed in the shade, that is to say, their subterraneous roots. The manure or nutritious qualities of one kind of soil, in which one species will flourish, may be poisonous to another vegetable species, especially if it be suddenly transplanted there, before its digestive and radicular organs have been gradually inured to it, by carefully managed transitions. Individual experience is, then, alone capable of showing us in what degree a substance is nutritive, and chemical analysis, as but recently applied to the appreciation of the alimentary powers of bodies, may be said to have fallen before the force of public opinion; it may be compared to a building erected without a foundation; and of the immense mass of figures and data collected, not one remains with any pretension to exactitude.

We shall distinguish, in alimentation, three classes of substances, which, although different, concur equally, one with another, towards the regularity of digestion: 1o. *Nutritive substances properly so called*; 2o. *Supplementary substances*; and 3o. *Substances protective of digestion.*

1o. *Nutritive substances properly so called*, or substances which combine the two elements necessary to digestive fermentation, (sugar and gluten or albumen), in a proportion suitable to the special elaboration of the individual. It is almost superfluous to repeat here, that no fermentation can take place without the vehicle of water; the presence of this vehicle is always to be understood, in the explanation of this phenomenon, which we shall give lower down. Gum, and vegetable tissue, which is merely a transformation of gum, is a substance which contributes in a very feeble degree towards nutrition; for, if associated with sugar, it is incapable of filling the office of gluten, and, combined with gluten, it is unable to answer the purposes of sugar. Gum, in fact, is sugar combined with earthy bases; it is a commencement of ligneous tissue, the most inert of tissues, and that which is most difficult of disaggregation. Gluten alone, as also solid albumen which is isolated from its soluble portion, and animal tissue when separated by expression and by washing from all the soluble juices which it had elaborated, rank next to gum, as negative substances; but they are also at the head of substances complementary or necessary to digestion; and as their chemical isolation can never be perfect, but each of them must always contain, to whatever process it may be subjected, a little soluble substance, the association of which would render them perfectly nutritive, it follows that the ingestion of these three orders of substances, or rather of these three forms of the same organic substance, may suffice the purposes of nutrition for a short time. Alone, they are almost indigestible; they do not furnish sufficient for nutrition. Saccharine substance alone is not wholly assimilable to gum; for the *debris* of the mucous membrane, which is daily undergoing a process of exfoliation, is capable of furnishing to this element, the other material necessary to normal digestion. But digestion then takes place at the expense of the individual himself; we may say, in some measure, that man digests his own substance, that he consumes himself for his own nourishment, a state which can neither continue long, nor be reconciled with the progress of unlimited development which constitutes life. Saccharine drinks denude the intestinal parietes, and consequently inflame them, unless they have their digestive complement in the other ingestions. Gum in solution, on the other hand, which is entirely negative, does not inflame them; on the contrary, it covers the stomachic surfaces with a kind of varnish which allays and protects, but does not nourish them. But if we administer gum and sugar in the solid state, these two substances, under this form, are inflammatory; they dry up the walls of the alimentary canal, by their avidity for the aqueous molecules. In fact, if you expose sugar to an atmosphere containing a little moisture, it will gradually fall into a state of deliquescence. This will fully explain the bad effects which are sometimes caused in children by eating large quantities of sweetmeats. Gelatine is not poisonous, unless, from negligence or some other cause, poison has been added to it; but it is a very imperfect kind of nutriment. It would be repulsive to the taste and injurious to the stomach, without the complementary substances which are added to it, under the name of seasonings, such as leeks, onions, carrots, turnips, cabbages (which, in themselves, are nutritive substances,) besides the quantity of good meat gravy, by which the gelatine is rendered more soluble. In this way, however, it is rather disguised than improved; the broth is undoubtedly deteriorated by this association. The extreme advocates of gelatine, as well as its more violent opponents, seem to have constantly committed an oversight in their discussions; they have confounded the effects of the diet indiscriminately with the consequences of poisoning, or else with those of nutrition. Its opponents who have experimented on themselves, have believed themselves poisoned by it; whereas the evil effects induced in them were but the result of an unseasonable diet. The advocates of gelatine, on the contrary, have instanced the example of the hospitals, where patients are confined with benefit to this diet; forgetting that, if gelatine were really nutritive to individuals in health, the physician would not prescribe it to those in a state of disease. For my own part, I feel convinced that gelatine must be classed among the number of substances which oppose our digestion by their insufficiency. Potatoe-starch is much less nutritious than the potatoe itself; the starch of the *cerealia* is a thousand times less nutritious than their *farina*; or rather, starch alone, even when cooked, is not nutritious at all; gluten alone is very indigestible. How then does it happen that starch agrees with the stomach of the child or with that of the invalid? This depends on the fact that the child sucks after taking the pap, and, moreover, that this amylaceous pap is prepared with good broth, with milk, or with butter, three mixtures which contain in great abundance the substance necessary to produce the fermentation of the starch. The relative proportions of the two elements, which enter into the composition of a nutritive substance, may be suitable to certain animals, at the same time that they constitute an indigestible aliment for others. The same may be said with regard to the different individuals of the same species, and even with the same individual, according to his predisposition and state of health. A sudden change from one kind of diet to another, will frequently produce symptoms resembling those of poisoning. Let the poor Irishman suddenly seat himself at the table of the rich man's lackey; in two days he will contract a continued fever. It would be still worse, if you oblige this lackey, who has now become so dainty in his appetite, to confine himself to potatoes, which are not sufficient to satisfy his hunger. Under these circumstances, he would undoubtedly be attacked with typhoid fever. Place the vigorous mechanic, who is accustomed to eat largely, on a spare diet, and confine him to the house, for some trifling disturbance which may have arisen in the more subordinate of his functions, and you will transform his indisposition into disease of a serious character. Any law which imposes, on the different classes of society, the same labours and the same privations, must be an unequal law; for that labour which appears so difficult towards the one class, may be perfectly easy and light towards the other. The digestive organ does not change the custom of its elaboration, at our simple caprice; for its special mode of elaboration is the result of its mode of organisation; now, the organisation does not alter, it is merely developed. Let us, then, in our changes of habit and customs, follow the progressive march of development.

A foolish attempt has recently been made to supplant nature, and to substitute the natural diet, by an artificial one. Disease has consequently been engendered, by this encroachment on the natural laws. The farina of the cerealia is the chief diet for man in a natural state; but, it is said, that we have not sufficient for every body; an attempt has, therefore, been made to manufacture bread without farina, or at least with a very small portion of it. This principle has also been applied to cattle; for, it is said: if farina nourishes man, the refuse of farina should do for horses; and bread has been given them in the place of hay and of oats: this experiment did not, however, succeed, and has now been totally abandoned. Such must always be the case where man, in his arrogance, attempts to oppose nature, instead of seconding her; for, if he has not enough of a product, let him sow more, and not endeavour to subvert the laws of nature; let him labour to enrich the soil, and so give good bread to his fellow creatures; let him feed his beasts of burden with hay and with chaff, and occasionally with corn; he will thus do what is in his power, instead of attempting impossibilities. The mortality which, some time since, ravaged the cattle in the environs of the large towns, was produced solely by the substitution of the refuse or husks from our distilleries and sugar-houses, for the habitual nutriment of these animals. The husks, already indigestible of themselves, in consequence of the pressure which has deprived them of all that rendered them nutritive, the husks quickly ferment, and their fermentation, under the influence of the light, soon becomes ammoniacal. Hence, the putrid fevers, the meteorisations, the strokes of apoplexy, which are induced. I have seen cattle cured, under these circumstances, by the simple change of food; that is to say, by substituting hay and oats for this refuse, which had been given them with such bad results. We shall pursue this subject in our next lecture.

BRITISH ASSOCIATION. — MEDICAL SECTION.

(*From our own Reporter.*)

(Continued from p. 340.)

THIRD DAY.

The Section E, or Medical Section, met this day at the usual time and place.—Sir James Pitcairn, President.—The Secretary, Dr. Sargent, read a letter from Mr. Prichard, enclosing a meteorological register for 1842-3, taken in the county Caernarvon.

Dr. Houston read a physiological paper on the cause and manner of the circulation in acardiac fœtuses. He said that it was a continuation of a paper read by him at Bristol, and partly went to reply to certain objections made by Dr. Marshall Hall, of London, to the paper. He felt bound, at present, to read this paper, not only in defence of his own particular views, but also in defence of the views of other gentlemen, for instance, Drs. Graves, and Carpenter, whose theories on physiological points regarding the functions of the capillary vessels, had their accuracy at present called into question. The learned gentleman then proceeded to review the objections of Dr. Hall, and adduced several cases in support of his argument, to shew that the heart was not the sole agent by which blood was circulated through the body, and that there was strong reason for believing that the vessels themselves were possessed of considerable power in that respect. As the learned gentleman proceeded, he frequently adverted to some beautiful illustrations of the subject drawn under his particular inspection. At the close, Dr. Carpenter said that he had listened with great pleasure to the reading of the paper. He had read

the paper of Dr. Hall with surprise; and he was at a loss to know how Dr. Hall, so clever a man, and acute a reasoner, could have been so egregiously mistaken. Dr. Hall was an advocate for attributing propulsion of blood entirely to the heart; that doctrine appeared to him (Dr. Carpenter) quite unfounded when applied to the lower order of animals, though, as applied to man, it might be true.

Dr. Popham read a very interesting paper on the treatment of gangrene of the lungs by chloride of lime. He commenced by stating that the disease was an unfrequent one, though no less than three had come under his own observation, two of which resulted fatally. The third was a case that came under his observation in the North Infirmary of Cork. The patient laboured under very distressing symptoms, which usually accompany gangrene of the lung. His countenance was drawn in, his eyes hollow, unceasing cough, with muco-purulent expectoration, considerable dulness on percussion, sharp pain, and pulse 120. For three weeks after he had been admitted, counter irritation, expectorants, and anodynes, were tried, with little or no success; hectic set in, and was followed by complete prostration and loss of appetite. Subsequently he was put on the internal use of the chloride of lime, given in the form of solution, with the tincture of opium, when the most favourable symptoms followed, and in a few weeks he was able to leave the hospital, and return to his business. Dr. Popham concluded by giving a description of the appearances presented by the diseased structures, on being dissected in the two cases that had proved fatal. The right lung being in an advanced stage of mortification, and the lower lobe of the left in a state of sphacelus, with shreds of putrid membrane mixed with sanious fluid, of a most offensive odour, in the chest.

Dr. Sargent was of opinion that from the symptoms described by Dr. Popham, he (Dr. P.) had made a correct diagnosis of the disease.

Dr. Wall looked on the chloride of lime as a mere temporary remedy.

Dr. O'Conner regarded it in a much higher view; for it acted in a double way.

Dr. Oliffe followed, and read his paper :—"Reflections on Intestinal Obstructions." He said his object in bringing it before them was to call attention to a new operation, now performing in France, by M. Amussat, for the purpose of giving issue to the fœces accumulated in the intestines. The operation had been performed eight times by M. Amussat, at four of which he (Dr. O.) assisted. Having given an account of the cures of intestinal obstructions, and having shewn that in most of the cases, a fatal result took place, he proceeded to describe the *modus operandi.* He discussed the relative merits of two modes of operating, one of which consisted in incising the cœcum, and thereby opening the peritoneum; in the other the incision is made over the posterior surface of the intestine, without opening the peritoneal cavity, and which, being modified, was the course practised by Amussat, and to which he (Dr. O.) also gave precedence. Out of the four cases witnessed by him, he instanced one in particular, that of a child born with an imperforate *anus*, and wanting the lower part of the *rectum.* He was operated on by him (Dr. O.) together with M. Amussat, when only 24 hours old. They made an opening into the left lumbar colon; and at the present time the child was over two years of age. The learned gentleman exhibited some drawings illustrative of the disease, and of some appearances connected with the operation.

Dr. Wall related a case of obstinate constipation, which resulted fatally. The case, he said, was attended by him; and the absence of vomiting was considered by him as peculiarly remarkable; so much so, that he hoped to succeed, owing to the firmness of the stomach. The patient, however, died, and, on a *post-mortem* examination, a very considerable contraction of the calibre of the descending colon was discovered, so much so, that a pencil case was found difficult to be admitted; the coats of the intestines being also found to be quite cartilaginous.

After a brief reply from Dr. Oliffe, in which he recommended the operation under such indications, The Chairman stopped the discussion, alleging that when the matters went before the Association, and the profession, in particular, it would be for them to discuss them, and not for the present thin section.

Dr. Popham read an abstract from a most voluminous paper, furnished by Mr. Erichsen, of London, on the proximate cause of death after the spontaneous introduction of air into the veins. The writer referred to the researches made by several physiologists on the subject, and amongst the rest, by Amussat, Velpeau, Bouillaud, and Cormack, and paid a high compliment to the indefatigable exertions of the Commissioners appointed by the Academy of Medicine, at Paris, who investigated it, and fully established the possibility of the spontaneous introduction of air into the veins, shewed the phenomena that accompanied it, ascertained the circumstances that occasioned it, and the situations where it may occur.

Bichat supposed it to arise from the irritation produced in the vessels of the brain, and adduced several arguments in support of his opinion. Nysten was of opinion that the distension of the pulmonic ventricle occasions such a dragging of the fibres of the aortic ventricle as to obstruct its contractility. Dupuytren was of opinion that the air, having arrived at the right auricle, became dilated, and stopped the circulation, by distending the cavity. Amussat considers that it is owing to the distension of the right cavities of the heart; and Bouillaud traced it to the same cause, or to the presence of spurious blood in the branches of the pulmonary artery, preventing free circulation through the lungs; or, lastly, to its entering the veins of the brain, and compressing that organ. The learned writer having mentioned these, amongst several other theories, stated them to be, in his opinion, anything but satisfactory or free from objection, and proceeded to take up the several principles laid down, and to animadvert on them, adducing several experiments which he made, on the results of which it was that he disputed the validity of the causes assigned. These fully proved that death did not ensue from any functional derangement in the heart, as it carried on its action subsequent to that event. They also shewed that air seldom, or never, entered the cerebral vessels; consequently, death could not be attributed to congestion of the brain. The writer next proceeded to give a history of a new series of experiments which he performed, and from which he deduced the following conclusions :—First, that the primary arrest of the circulation took place in the capillaries of the lungs, or in the terminal branches of the pulmonary artery, in consequence of inability in the right ventricle to overcome the mechanical obstacles presented by the air bubbles in the vessels of these organs: second, that respiration and animal life ceased in consequence of a deficient supply of arterial blood to the central organs of the nervous system. He next proceeded to detail the best means of preventing the spontaneous introduction of air into the veins, and when it did occur, the best line of treatment to be adopted; the former he considered to be effected by tightly bandaging the chest and abdomen in operations where it was likely to occur, the *rationale* of which was obvious, as it was only in inspiration that the air could enter, and by keeping the breathing as shallow as possible the danger was considerably lessened or averted. In the latter, he recommended compressing the vein, so as to prevent inflation of the lungs; and that, with other minor remedial means, he considered sufficient to prevent a fatal termination. Having concluded the reading of the abstract, the Section adjourned to the following day. (Tuesday)

FOURTH DAY.

The Medical Section sat this day at 11 o'clock.—Sir James Pitcairn presiding.—The attendance was extremely thin. The only papers possessing interest read for the day were the following :—The first by Dr. Beven, and the other by Dr. O'Connor, of Cork, on the sudden loss of hair arising out of fright.

Dr. Beven proceeded to read as follows :—

There is no part of medical practice so often so embarrassing as cases of medico-legal investigation, particularly as regards the detection of poisons, whether of a vegetable or mineral nature, taken accidentally, by design, or with intent to murder. It is to an easy and certain method of detecting one of the last class that I would call the attention of the Section, namely, arsenic. A new mode of reducing it to the metallic form which I discovered during the last year, and which is, properly speaking, the *experimentum crucis.* Before the explanation of it, permit me to detail very briefly the modes hitherto practised. They may be divided into two classes, viz., fluid and reductive, now deemed sufficiently conclusive, but without sufficient grounds; they are as follows. In the month of October, 1842, in casting my eye over the Philosophical Journal of Science, I read a paper by an English author, wherein he mentions that by increasing the facility by which he got rid of the negative element, hydrogen, the reduction of metals from their salts or combinations was easily effected; accordingly, by electrifying, or causing an electric current to proceed from one end of a metallic rod, by introducing it into a dilute acid (nitric acid), and the other into the solution of one of its salts, he could effect his object. Accordingly, he did so, and found, by a series of experiments, that by a gold rod treated in this manner, he could reduce its salts, and in this way reduce silver with silver, lead with lead, &c. It struck me that this was a very great discovery, and likely to diminish the expense of some of our galvanic arrangements, and eminently useful in the electrotype process; but in this last my expectations were not realised. In pursuing my researches it occurred to me that I might, by proper arrangement, succeed by some of the metals in reducing the acids of arsenic from their solution. I accordingly selected two whose aptitude for oxygen I knew was great, namely, copper and zinc. I, therefore, submitted them to experiments, and obtained the result I desired. The mode I adopted was as follows :—I took a transparent long necked bottle, and introducing into the bottom some dilute nitro-muriatic acid, then the copper rod, and pouring over it some melted tallow, I suffered it to cool, then poured in the arsenical solution, and left all for some time to stand; and on examination, at the lapse of some time, I was surprised to find the rod quite black, and coated with metallic arsenic. The experiment not being arranged neatly, and to my taste, I repeated it, taking care to make the diaphaane as perfect as possible, and setting it aside, as before, I was much surprised to find at the end of that time that no change took place, I then concluded that I must have been deceived. I repeated the experiment several times with a like result. It then occurred to me to readjust it in as clumsy a manner as the first; the result was that I was eminently successful. Here was then an entirely new discovery. It being a matter of importance to test the arsenical solution, whether the whole was reduced or not, I repeated the experiment, with this difference, that when all was arranged, I gave the rod a twist, which rendered the experiment successful, as before, only allowing me to examine the fluid. Again, knowing the great readiness with which zinc unites to oxygen, I performed the experiment with this metal, and found the result more characteristic than the first; the arsenic being absolutely reduced in flakes. Here then are two certain modes, by which the surgeon or physician may satisfy himself of the presence or absence of arsenic in cases of poison. The process is equally successful in mixed fluids, and in the most minute quantity. The origin of this new and efficient process I lay claim to, being entirely my own suggestion. The experiments were laid before the Surgical Society of Dublin, last winter, and have been recommended by several toxicologists in Dublin. But it is strange how similar ideas strike the imagination of men in different countries; for I had scarcely made known my results, when there appeared, in the *Annales de Chimie*, an article on the same subject, by Hugo Reich, a German, wherein he stated that he succeeded in reducing arsenic from its solution by boiling it with filings of copper. It is scarcely necessary for me to say that I never had any communication with this gentleman. It is only another instance of persons far asunder discovering the same fact. Though my experi-

ments have been published some months in the Dublin Press, yet I find that Dr. Chester, in a late number of the Edinburgh Journal, has given the whole merit to the German philosopher.

ON THE SUDDEN LOSS OF HAIR FROM FRIGHT.

Dr. O'Connor next read the following paper: The extreme rareness of well-anthenticated cases, such as the following, will, I should trust, prove a sufficient excuse for my bringing it under your notice. A gradual loss of hair from disease, or as an effect of age, climate, or the use of powerful medicines, is not uncommon; but if I can trust the authorities I have consulted, the cases are rare in which this effect has been suddenly produced, and still more so when it can be traced to the sole agency of the mind; and though interesting as such cases are to the physiologist, they are not without their use to the practical physician, as evidencing the powerful influence of the passions in the production, and consequently in the cure, of disease. It is to this mysterious, and often unobserved agency, that we are to attribute many of the wonderful results which would appear to follow from simple treatment, in the hands of persons who by fair or unfair means, have gained an ascendancy over the minds of their patients, and a knowledge of its effects should make us guarded in adopting any new mode of treatment, merely from its success in the hands of a particular individual, without enquiring how far the hope and confidence inspired by novelty (a high reputation) might have produced the result. The case is as follows:—Daniel M'Carthy, the son of a farmer, aged 12 years, in the enjoyment of perfect health, was seized with a fit of screaming in his sleep, which awoke the entire family. On enquiring the cause of his alarm, he said, that two men were dragging him out of the house to murder him. With considerable difficulty he was convinced, that he laboured under a delusion, and on the following day his hair began to fall off in great quantities. At the end of a fortnight it had disappeared from the entire head, the eyebrows, and eyelashes. He continues still in this state, though a period of seven years has elapsed. The scalp is of a peculiar death-like colour, without any of the glossy appearance which it presents when the loss of hair arises from age. He has a few scattered woolly hairs in the place of whiskers, which is all that is to be seen on his body. His health was slightly disturbed for some days after the occurrence related: in all other respects, he has enjoyed most perfect health.

At the close, there being no other papers to be brought before the Section,

Sir James Pitcairn was moved from, and Dr. Houston to, the chair, and the marked thanks of the Section being voted to the former gentleman, the Section finally adjourned.

PROFESSOR OWEN'S LECTURES.

The last course delivered by this distinguished *savant* is now before us, and we proceed to favour our readers with the portions which are likely to prove most interesting to them. The first shall be from the first lecture, where the Professor shews the utility of considering Comparative Anatomy according to the class of animals, and in the ascending scale.

Many examples suggest themselves of the advantage of this mode of studying the organisation of animals, for the purpose of acquiring just conceptions of the uses of the organs. In tracing, for example, the progressive complication of the heart, we first find the simple dorsal vessel; it is next concentrated into a ventricle, and to this single cavity an auricle is afterwards appended: then the auricle becomes divided; afterwards there are two ventricles: there are instances, even in the animal kingdom, where there are three ventricles, and even ten ventricles. Now, the two-cavitied, dicœlous, or bipartite heart, is met with in the snail and in the fish; but the physiology of such conformation of the organ can only be explained by its connections with other organs, and by the general structure and habits of the animal.

First, then, as to the connections of the bipartite heart. In the snail it is so placed, in reference to the breathing organ, that it receives the aerated blood from that organ, and propels it to the system: it is an organ for the circulation of arterial blood; in other words, a systematic heart. The bipartite structure of the central organ of circulation, compared with lower or higher conditions of the same organ, could never have taught that fact;—the knowledge of it necessitates and pre-supposes a knowledge of the relation of the heart to the lungs. In the fish, the bipartite heart is so connected with the breathing organs, that it transmits exclusively to them the blood which the auricle receives from the veins of the body: it is an organ for the circulation of venous blood; in other words, a "pulmonic heart." Another question then arises, Why is the dicœlous heart in one animal systemic, in another animal pulmonic? This can only be answered by a further insight into the organisation and powers of such animals. With respect to the instances adduced, both species are cold-blooded, and, compared with the warm-blooded classes, both have a low amount of respiration; but the fish and snail differ widely in the degree in which they exercise or enjoy the respiratory functions. The snail, proverbially sluggish and inactive, has its muscular system reduced almost to a single ventral disc, by the successive contractions of the parts by which it glides slowly along. The chief mass of its body is made up of the organs of the vegetative function. We see here a wide, convoluted, alimentary canal, an enormous liver, a large ovarium, and as large a testis, combined with many singular accessory generative organs, in the same common visceral cavity: they make up the great bulk of its body. The tissues of such viscera are endued with little of that action which assists in the acceleration of the currents of blood, through them; and, therefore, the greater circulation is aided by the contractions of a ventricle: whilst, as the function of respiration bears ever a direct ratio to the energy and frequency of muscular action, it suffices that the venous blood should flow with an equable and unaccelerated stream over the oxygenating surface, and the energies of the heart are therefore confined to the general circulation.

In the fish, the proportions of the muscular and visceral parts are reversed: the greater part of the body is composed of the vibrating and contractile fibre, by the action of which the fish is propelled through the liquid medium: while at the same time the systemic circulation is proportionally aided and accelerated. But this amount and energy of muscular action requires a proportional activity of the respiratory function, and the forces of the heart are, therefore, concentrated upon the gills.

Thus we perceive that a similar construction of an organ may, through its different relations with other organs, subserve different functions: whilst the conditions of such differences demand for their elucidation, a knowledge of the general organisation and endowments of the entire animal.

Permit me to give another instance of the necessity of studying the whole organisation and relations of an animal in order to learn the physiology of the modification of one of its organs.

In tracing the progressive complications of the stomach, we at length meet with it under that very singular condition which we term a gizzard; in which the cavity is reduced to a mere fissure, by the accumulation of muscular fibres in its walls, and by a thick and callous lining of dense horny matter. The physiologists who viewed this modification of a stomach, without reference to the organisation of the bird, and who contented themselves by experimenting upon the compressive and triturating force of the gizzard, were led to conclude that digestion was mainly a mechanical process. They were here misled by Comparative Anatomy; but it was by its abuse.

Graminivorous and granivorous birds—those species whose food demands the most complete comminution — have that mechanical process performed, it is true, exclusively by the gizzard; but near this triturating stomach we find another cavity as exclusively secretory in its functions, and which we know, by experiment, to furnish a powerful solvent in great quantities to act upon the comminuted food. But why the comminuting machinery should be transferred to the abdominal cavity in the bird, requires for its explanation a review of the general structure, habits, and sphere of existence, of this particular form of animal.

The most prominent quality in the bird is its power of flight—to lighten the extremities and accumulate the weight at the centre of gravity, favour this power: it is especially requisite that the head, which is supported on a long and flexible neck, should be as light as possible. To this end, the jaws, instead of supporting dense and heavy teeth, are wholly edentulous, and are sheathed with light horn; they are simply prehensile, not masticatory, organs: and the muscular masses, subserving mastication, are consequently uncalled for. The compensation is admirably adjusted in harmony with the exigencies of the bird: pebbles are swallowed to serve as teeth; are collected in the gizzard, near the centre of gravity, of the whole body, at which point the muscular mass required to operate upon them, and, by their means, to crush the grain, is likewise concentrated. Thus the teeth, and masticatory muscles are removed from the head, and concentrated in the stomach, at the centre of gravity of the bird; and the peculiarities of its stomach are thus found, by a general survey of the organisation and habits of the animal, to relate to the acquisition of certain mechanical advantages in the disposition of the weight of the body, so as to favor the act of flight.

I might easily multiply such instances, but I should thus only anticipate the illustrations of which the present course of lectures will mainly consist.

Not only the soundest and widest physiological generalizations, but these inductions which, from sometimes being based on a mere fragment of a bone, seem like a divination of the nature and affinities of an extinct species, depend entirely upon a knowledge of the laws of correlation of organic structures, and can only be made by the comparative anatomist, who has studied not only the gradations of structure, but the general combinations of organs which characterise the species of each particular class.

Polygastric Infusoria.—Their Motor and Generative Systems.

If you watch the motions of the Polygastric Infusoria, you will perceive that they avoid obstacles to their progress; rarely jostle one another; yet it is difficult to detect any definite cause or object of their movements. Some species, it is true, prey upon animalcules of their own class, and will gorge an individual of nearly their own size, which they attract by the currents in the water caused by the oral vibratile cilia. But the greater number of the class subsist on the minute atoms of the decomposing animal and vegetable substances of the fluids or infusions in which they exist,—particles which do not require a definite pursuit, since they are inert and generally diffused throughout the infusion.

The motions of the Polygastria have appeared to me, long watching them for indications of volition, to be in general of the nature of respiratory acts rather than attempts to obtain food or avoid danger. Very seldom can they be construed as voluntary, but seem rather to be automatic; governed by the influence of stimuli, within or without the body, not felt, but reflected upon the contractile fibre; and therefore are motions which never tire. We may thus explain the fact which Ehrenberg relates—not without an expression of surprise—namely, that at whatever period of the night he examined the living Infusoria he invariably found them moving as actively as in the daytime; in short, to him it seemed that these little beings never slept. Nor did this appear to be merely the result of the stimulus of the light required to render them and their movements visible; since when they were observed upon the sudden application of light without any other cause of disturbance, they were detected coursing along

at their ordinary speed, and not starting off from a quiescent or sleeping state.

Perhaps the most marvellous part of the organisation and economy of the Polygastric Infusoria is that which relates to the function of generation. This function, I may observe, is the only one which does not necessarily require a special organ for its performance. I am not aware that this proposition has been before enunciated, but it will be quite intelligible when the essential nature of the generative process is better understood.

Although both ovaria and testes have been unequivocally demonstrated in the *Polygastria*, yet their most common mode of propagation is quite independent of, and superadded to, the function of these organs. In a well-fed *Monas, Leucophrys, Enchelys, or Paramecium*, the globular parenchyme may be observed to become a little more opake and apparently more minutely subdivided: then a clear line may be discerned stretching itself transversely across the middle of the body and indicating a separation of the contents into two distinct parts. The containing integument next begins to contract along this line, and the creature to assume the form of an hour-glass: this, though doubtless an uncontrollable, seems to be a spontaneous action, and the struggle of each division to separate itself from its fellow indicates an impulse in each to assume its individual and independent character; the which they no sooner effect than they dart off in opposite directions, and rapidly acquire the normal size and figure. In the *Vorticella* and some other species, we have examples of spontaneous division in the longitudinal direction, which commences at the mouth, and extends to the irritable and contractile stem, from which one or both of the new formed individuals detach themselves. In some species this spontaneous fission, which corresponds, as I stated in my Lectures on Generation in reference to the ova of the Medusa, in so interesting a manner with the earliest phenomenon in the development of the ovum in the higher animals, is arrested before its completion, but the partially separated individuals continue in organic connection and form compound animals, sometimes in the form of long chains, sometimes branched, sometimes expanding to form a spherical bag, as in the well-known *Volvox globator*, which was long deemed a single individual of a peculiar species.

Offices which these Animalcules perform in the Grand System of Organised Nature.

And now you may be disposed to ask: To what end is this discourse on the anatomy of beings too minute for ordinary vision, and of whose very existence we should be ignorant unless it were revealed to us by a powerful microscope? What part in nature can such apparently insignificant animalcules play, that can in any way interest us in their organisation, or repay us for the pains of acquiring a knowledge of it? I shall endeavour briefly to answer these questions. The Polygastric Infusoria, notwithstanding their extreme minuteness, take a great share in important offices of the economy of nature, on which our own well-being more or less immediately depends.

Consider their incredible numbers, their universal distribution, their insatiable voracity; and that it is the particles of decaying vegetable and animal bodies which they are appointed to devour and assimilate.

Surely we must in some degree be indebted to those ever active invisible scavengers for the salubrity of our atmosphere. Nor is this all; they perform a still more important office, in preventing the gradual diminution of the present amount of organised matter upon the earth. For when this matter is dissolved or suspended in water, in that state of comminution and decay which immediately precedes its final decomposition into the elementary gases, and its consequent return from the organic to the inorganic world, these wakeful members of nature's invisible police are every where ready to arrest the fugitive organised particles, and turn them back into the ascending stream of animal life. Having converted the dead and decomposing particles into their own living tissues, they themselves become the food of larger Infusoria, as the *Rotifera*, and of numerous other small animals, which in their turn are devoured by larger animals, as fishes; and thus a pabulum, fit for the nourishment of the highest organised beings, is brought back by a short route, from the extremity of the realms of organic matter.

There is no elementary and self-subsistent organic matter, as Buffon taught: the inorganic elements into which the particles of organic matter pass by their final decomposition are organically recomposed, and fitted for the sustenance of animals, through the operations of the vegetable kingdom. No animal can subsist on inorganic matter. The vegetable kingdom thus stands, as it were between animal matter and its ultimate destruction; but in this great office plants must derive most important assistance from the Polygastric *Infusoria*. These invisible animalcules may be compared, in the great organic world, to the minute capillaries in the microcosm of the animal body, receiving organic matter in its state of minutest subdivision, and when in full career to escape from the organic system, and turning it back by a new route towards the central and highest point of that system.

Microscopical Anatomy—Hobbes's Anticipations—The Infusoria described.

Some scepticism may be natural and pardonable, when the anatomy of an animalcule 1-1000th, of a line in diameter, is attempted to be described: but trace it to its source, and you will find such incredulity to be essentially based, not merely on distrust in our means of observation, but in the difficulty of adequately conceiving the relations of size. Just ideas of these relations are essential to the acceptance and full appreciation of the discoveries which have extended for us the bounds of space; and I will ask permission to quote the words of one of our old philosophers, which bear directly on this subject, and, expressing a noble confidence in intellectual progress, shed a prophetic gleam upon the present improved powers of penetrating space.

"In consistency, I suppose some bodies to be harder, others softer, through all the several degrees of *tenacity*. In magnitude, some to be greater, others less, and many unspeakably little. For we must remember that, by the understanding, quantity is divisible into divisibles perpetually. And, therefore, if a man could do as much with his hands as he can with his understanding, he would be able to take from any given magnitude a part which should be less than any other magnitude given. But the omnipotent Creator of the world can actually from a part of anything take another part, as far as we by our understanding can conceive the same to be divisible. Wherefore there is no impossible smallness of bodies. And what hinders but that we may think this likely? For we know that there are some living creatures so small that we can scarce see their whole bodies. Yet even these have their young ones; their little veins, and other vessels, and their eyes so small as that no microscope can make them visible. So that we cannot suppose any magnitude so little, but that our very supposition is actually exceeded by nature.

"Besides, there are now," (the book was published in 1655) "such microscopes commonly made, that the things we see with them appear a thousand times bigger than they would do if we looked upon them with our bare eyes. Nor is there any doubt but that, by augmenting the power of these microscopes (for it may be augmented as long as neither matter nor the hands of workmen are wanting,) every one of those thousandth parts might yet appear a thousand times greater than they did before. Neither is the smallness of some bodies to be more admired than the vast greatness of others. For it belongs to the same Infinite Power as well to augment infinitely as infinitely to diminish. To make the great orb, namely, that whose radius reacheth to the sun, but as a point in respect of the distance between the sun and the fixed stars; and, on the contrary, to make a body so little, as to be in the same proportion less than any other visible body, proceed equally from one and the same Author of Nature. But this of the immense distance of the fixed stars, which for a long time was accounted an incredible thing, is now believed by almost all the learned. Why then should not that other, of the smallness of some bodies, become credible at some time or other? For the majesty of God appears no less in small things than in great; and as it exceedeth human sense in the immense greatness of the universe, so also it doth in the smallness of the parts thereof. Nor are the first elements of compositions, nor the first beginnings of actions, nor the first moments of time more credible, than that which is now believed of the vast distance of the fixed stars."

I have said, that in the diminutive *Polygastria*, there might be discerned structures analogous to our own. Vibratile cilia—their sole organs of locomotion—are the first actively moving parts with which the mammiferous ovum is endowed, with which, therefore, we ourselves commence life. They are retained throughout life as an essential part of the organisation of a very extensive tract of our internal mucous membranes; and these most minute and incalculably numerous vibrating filaments, like their analogues in the *Polygastria*, know no repose.

It might almost have been anticipated that this earliest possessed, and most extensively diffused, organical dynamic in every member of the animal kingdom, should be the most conspicuous, and the sole, moving power in the first-born of Fauna.

Is man liberated from one narrow spot in space, and enabled to move to and fro on the surface of his little world, by virtue of an internal receptacle of nutriment? So, likewise, is the Infusorial animal. Even some of the superadded complications of the digestive sac are present; the Polygastrian seizes food with tentacular lips, reduces it by the action of a hundred dental spines, arranged, as we have seen, like the teeth of the circular trephine; it is the very type of the digestive function: assimilating and re-organising the decomposing particles of animal and vegetable matter with a hundred-stomach power. That low delight, the bliss supreme of the civilised gourmand, is given most liberally where it ought to be, to the creatures at the lowest grade of animality.

Nor is the procreative function so abundantly or so variously enjoyed by any other animal as in the *Polygastria*. At once fissiparous, gemmiperous, and oviparous, the androgynous organs for the development of the fertile ova were, as shown in the preceding Lecture, of a sufficiently complicated character. In creatures whose most obvious and common mode of propagation is by spontaneous fission, a power so actively exercised, as, according to Ehrenberg's experiments, to be productive of an incalculable rapid rate of multiplication, it may be demanded: To what end were special organs of generation developed? Why should these fissiparous *Polygastria* be provided with male glands, vesiculæ seminales, and reticulated ovaria; with normal reproductive organs almost as complicated as in the snail, which has no other mode of generation than by fertile ova? I am apt to think that the fissiparous reproduction has reference principally to increasing the numbers of individuals in the infusions, or receptacles of decaying organisms, in which they at that time exist; whilst the development of fertile ova has relation to future and different localities or collections of such infusions, into which the ova may be conveyed more easily than the entire animals, and so lay the foundation of new generations of Infusoria. In the heats of summer, for example, many of the pools and stagnant collections of water, in which Infusoria abound, are dried up. Now, it is true, that certain Infusoria have the power of retaining their vitality for a long time in a state of desiccated torpidity. I shall presently have to allude to the experiments of Spalanzani and others on the wheel-animalcules, in illustration of this curious property. Some who have repeated his experiments have not succeeded in reviving the subjects after so long a period of inanimation: nevertheless, great tenacity of life is unquestionably, notwithstanding the delicate tissues of the Infusoria, a property of creatures of their grade of organisation; and what holds good of the parent, in regard to this property of latent life, must, *a fortiori*, be allowed to the ovum.

Now the act of oviparous generation, that sending forth of countless ova through the fatal laceration or dissolution of the parent's body, is most

commonly observed in the well-fed *Polygastria*, which crowd together as their little ocean evaporates; and thus each leaves, by the last act of its life, the means of perpetuating and diffusing its species by thousands of fertile germs. When the once thickly tenanted pool is dried up, and its bottom converted into a layer of dust, these inconceivably minute and light ova will be raised with the dust by the first puff of wind, diffused through the atmosphere, and may there remain long suspended; forming, perhaps, their share of the particles which we see flickering in the sunbeam, ready to fall into any collection of water, beaten down by every summer shower into the streams or pools which receive or may be formed by such showers, and, by virtue of their tenacity of life, ready, to develope themselves wherever they may find the requisite conditions for their existence.

The possibility, or, rather the high probability that such is the design of the oviparous generation of the *Infusoria*, and such the common mode of the diffusion of their ova, renders the hypothesis of equivocal generation, which has been so frequently invoked to explain their organ in new-formed natural or artificial infusions, quite gratuitous. If organs of generation might, at first sight, seem superfluous in creatures propagating their kind by gemmation and spontaneous fission, equivocal generation is surely still less required to explain the origin of beings so richly provided with the ordinary and recognised modes of propagation. Many experiments have, however, been detailed, in which adequate precautions appeared to have been taken to prevent the possibility of the entry of fertile germs into the fluid experimented on, after means had been taken to destroy all that it might contain. From these experiments, the mere access of atmospheric air, light, and heat to the infusions has been deemed to include all the conditions required for the primary formation of animal or vegetable organisms. The results in favour of such a view are, however, explicable by supposing that due precautions had not been adopted at the beginning of the experiment to exclude every animal or germ capable of development in the infusion, or to gain satisfactory assurance that the air subsequently admitted contained nothing of the kind. The only experiment in which these difficulties appear to have been fully overcome, is that in which the requisite apparatus was conceived by Professor Schulze of Berlin. He filled a glass flask half full of distilled water, in which were mixed various animals and vegetable substances: he then closed it with a good cork, through which were passed two glass tubes, bent at right angles, the whole being air-tight: it was next placed in a sand bath, and heated until the water boiled violently. While watery vapour was escaping by the glass tubes, the Professor fastened at each end an apparatus which chemists employ for collecting carbonic acid: that at the one end was filled with a solution of potash. By means of the boiling heat, it is to be presumed that every thing living and all germs in the flask or in the tubes were destroyed; whilst all access was cut off by the sulphuric acid on the one side, and by the potash on the other. The apparatus was then exposed to the influence of summer light and heat; at the same time there was placed near it an open vessel, with the same substances that had been introduced into the flask, and also after having subjected them to a boiling temperature. In order to renew constantly the air within the flask, the experimentor sucked with his mouth several times a day the open end of the apparatus, filled with the solution of potash, by which process the air entered his mouth from the flask through the caustic liquid, and the atmospheric air from without entered the flask through the sulphuric acid. The air was of course not at all altered in its composition by passing through the sulphuric acid in the flask; but all the portions of living matter, or of matter capable of becoming animated, were taken up by the sulphuric acid and destroyed. From the 28th of May until the beginning of August, Professor Schulze continued uninterruptedly the renewal of the air in the flask, without being able, by the aid of the microscope, to discover any living animal or vegetable substance; although, during the whole of the time, observations were made almost daily on the edge of the liquid; and when, at last, the Professor separated the different parts of the apparatus, he could not find in the whole liquid the slightest trace of *Infusoria* or *Confervæ*, or of mould; but all three presented themselves in great abundance a few days after he had left the flask standing open. The vessel which he placed near the apparatus contained on the following day *Vibriones* and *Monads*, to which were soon added larger Polygastric *Infusoria*, and afterwards *Rotifera*.

Mode of Destruction of the Infusoria and Rotifera—Their great Tenacity of Life.

Infusoria are destroyed generally by expanding and bursting, after a few minutes' subjection to the heat of boiling water.

In water subjected to a galvanic current strong enough to cause decomposition, the contained *Infusoria* are killed. When subjected to a weaker current, those only which came into its course were affected: some *Rotifera* were observed to be stunned only, and afterwards recovered; others were killed.

Tenacity of life is a very striking physiological character of the *Infusoria*.

The famous phenomena of the revival of *Rotifera*, after having been completely dried and apparently killed, certainly when reduced to the state of the most complete torpidity, were first observed by Leeuwenhoek in the year 1701. The father of microscopical anatomy had been engaged in examining some specimens of *Rotifer vulgaris* with *Euglena sanguinea*, and had left the water in which they were contained, to evaporate. Two days afterwards, having added some rain-water, which he had previously boiled, within half an hour he saw a hundred of the *Rotifera* revived and moving about. A similar experiment was followed with the same result after a period of five months, during which period the *Rotifera* had remained in a state of complete desiccation and torpidity. These observations were repeated by Baker and J. Hill. You will find all the experiments that were recorded before the time of Haller accurately quoted in his great "Physiologia Corporis Humani," vol. viii. p. 111. Fontana kept *Rotifera* two years and a half in dry sand, exposed to all the power of an Italian summer's sun: yet in two hours after the application of rain-water they recovered life and motion.

Goze, Corti, and Muller, record several experiments; but those performed by the celebrated Abbe Spallanzani are perhaps most generally known.

He succeeded in reviving his *Rotifers* after four years' torpidity: he alternately dried and moistened the same animalcules twelve times with similar results, except that the number of the revivers was successively smaller; after the sixteenth moistening he failed to restore any of them to life.

One of the essential conditions of the revival of the *Rotifers* appeared to Spallanzani to be their burial in sand; the access of air seems prejudicial to their retention of vitality. Muller, the famous Danish observer of *Infusoria*, only succeeded in reviving them when they were surrounded by foreign particles, and defended from the air. Both Oken and Rudolphi deny the revival of desiccated animals; but later observers have succeeded in producing the wonderful phenomena described by Spallanzani, especially Professor Schultze; and I myself witnessed at Freiburg, in 1838, the revival of an *Arctiscon* which had been preserved in dry sand by the Professor upwards of four years.

(To be continued.)

The Blood.—The blood cannot be deprived of a certain quantity of its globules without there ensuing a great prostration of the muscular system—a most remarkable general weakness—serious disturbances of the nervous system, which manifest themselves by different disorders of the understanding, of feeling, and of motion,—different disturbances of the digestion, respiration, and circulation.

EXTRACTS FROM GERMAN JOURNALS.

On Ulceration and Perforation of the "Appendix Vermiforme," by Foreign Bodies. By Professor Volz.

After a succinct enumeration of the authors who have related cases of perforation of the "appendix vermiforme," M. Volz gives us the following case:—

1. A soldier died twenty-four hours after his admission into the hospital, with all the symptoms of a violent peritonitis. With the exception of slight periodical pains in the umbilical region, he had always enjoyed good health, and had regularly done duty. On a *post-mortem* examination, we found, in the abdominal cavity, a collection of matter and flakes of gangrenous cellular tissue; a few pints of yellowish serum—the epiploon adherent to the intestines, and a few layers of plastic lymph in a state of exudation. The appendix vermiforme was grey and tumefied, and presented in its median part a jagged perforation. The mucous membrane of the intestines was healthy.

This case being the first of this description that had come under the author's observation, he did not direct special attention to the contents of the cœcal appendix.

Case 2. C. F., 11 years of age, had hitherto enjoyed good health. He was, in the beginning o Jan., 1840, seized with a general peritonitis, which he at the time attributed to a fall upon his belly a few days before. Death ensued in six days, preceded by violent pains in the belly and oppression of the chest, and a diarrhœa caused by calomel. The *post-mortem* examination was made on the 19th January. An effusion of matter and plastic lymph in the abdomen; the intestines adhering to each other; the external surface of the liver, the muscles of the cœcal region, and the diaphragm on the right side, were in such a state of suppuration that the perforated diaphragm allowed a free passage between the peritoneal and the pleural cavities. The vermiform appendix was pierced, and in the opening was an earthy substance, about the size of a half grain of coffee. Its mucous membrane was ulcerated. There were also two perforations in the small intestines, surrounded by an inflammatory circle; every where else the digestive mucous membrane was healthy. The ulceration appeared to have passed, in its formation, from the outer surface to the inner, as the opening was larger at the serous than at the muscular and mucous membrane. In the right breast there was a considerable quantity of pus, which had come from the perforated part of the diaphragm. There was three-quarters of a pint of yellow serum in the pericardium; the surface of the heart was covered with granulations of lymph. The disease appeared to commence in the ulceration of the cœcal appendix, and thence the partial peritonitis and inward perforation of the intestines,—then an escape of the fœces into the abdominal cavity; general peritonitis; ulceration of the liver and muscles; perforation of the diaphragm; pleurisy; and, lastly, pericarditis.

Case 3.—Mathew Müller, an artilleryman, aged 20, complained, on the 6th of Oct., 1841, of symptoms denoting an abdominal typhoid fever, then prevailing in his regiment. We first administered a vomit, then a lotion, and afterwards a scruple of calomel, a medicine that had been very beneficial in the epidemic. On the 9th, there being great pain in the lower part of the abdomen, principally in the cœcal region, unaccompanied by any gurgling noise, we applied twenty leeches. On the 11th, the cœcal region was stretched and painful; four copious stools, yellow and liquid; pulse, 84; skin, dry and rather cold; urine, yellow and muddy. At 3 o'clock in the afternoon, cold sweat, followed by a violent fit, with lively pains in the abdomen; frequent vomiting of a yellow, shreddy substance; two stools. Towards night,—burning thirst; tongue, smooth and moist; forehead, cold; nose, knees, and extremities cold; pulse, 134; belly stretched and painful, up to the waist. M. Volz, believing it to be a perforation of the intestine, proposed opium in large doses; but his brother-physician, not being of this opinion, prescribed an

emulsion of castor-oil (3 grains of calomel every 2 hours); thirty leeches upon the belly, warm bath, and a mustard-plaster on the calves of the leg. At night, same state, (a small blood-letting, five drops of tincture of opium every hour, emulsion of castor-oil.) On the 12th, belly less stretched and painful; tongue and extremities cold; no pulse; thirst inextinguishable; vomiting and diarrhœa. Died on the 13th.—*Post-mortem Examination.* Exudation of plastic lymph lining the intestines: and an effusion of serum, yellow and muddy, in the lower part of the abdomen; cœcum adhering in the iliac fossa, surrounded by grey, greenish-coloured matter; the vermiform appendix of a grey-bluish colour, tumefied, undulated, adhering to the cœcum, perforated in two places, and, on compression, allowing the fœcal substances and air to escape. We found in the cavity of the appendix a lengthened body of the form and volume of a date-kernel. The mucous membrane of the cœcal appendix, of the cœcum, and of some parts of the ilium, was spotted with black, of a blue colour, but intact.

In the following case, also, there is, first, perforation of the cœcal appendix; circumscribed peritonitis; adherence of the intestine; rupture of the latter, by pus mixed with fæcal substances; and, lastly, general peretonitis:—

Case 4, Chas. Morlock, 34 years of age, an idiot, died on the Sept. 14, 1841, after complaining of colic for a single day. On dissection, we found in the lower part of the abdomen the products of a former peritonitis, and of one very recent. There were purulent, plastic exudations lining the intestines; false membranes; well-organised, and even cartilaginous, degeneracy of the peritoneum; the epiploon adhering to the cœcum, and former adherences of this intestine with the abdominal wall. In the middle of these adherences, was a small cavity, containing two grey calculi, of the shape of peas. The cœcal appendix was not examined.

The author, to whom this case was communicated by his brother-physician, at Pforzheim, thinks it should be classed amongst cases of perforation of the cœcal appendix. To judge by the form and nature of the concretions found behind the cœcum, or after their departure from the appendix, they had been encysted by the effects of chronic inflammatory action; the recent peritonitis, engrafted upon the ancient one, was, in all probability, the result of a blow which the deceased received upon the abdomen, a few days before his death.

Case 5. Catherine L——, washerwoman, aged 24, was taken suddenly, on the night of the 8th of November, with a violent pain in the right iliac fossa, (as if she had ruptured her abdomen) whilst in the act of lowering a basket of linen which she had been carrying on her head. The day following, her menses came on, and lasted three days. Repose—emulsion of castor-oil—pain less. Irritation on the 13th. The ordinary attendant being absent, M. Volz was called in. He noticed violent pains in the right side; abdomen large and hard, very sensible to the touch; no symptoms of hernia; breathing short; face animated; skin fresh; pulse depressed, quick; no appetite; burning thirst; no vomiting; tongue dry in the middle; urine thin and deep-coloured; constipation for the last two days; bowels free (castor oil). On the 15th, vomiting with ease, before taking the castor-oil; tongue clean and moist; bowels in the same state; gurgling noise, similar to that produced by filling a bottle; urine of a deep red tint, with a coarse sediment. (25 leeches upon the abdomen, 5 drops of laudanum every half-hour, castor-oil injection.) Towards night, much easier, and profuse sweat; two stools; abdomen soft, and less painful; tongue dry in the middle (the drops given so sparingly, that the pains returned.) On the 16th, night good; little pain; abdomen less distended, and no longer painful when touched; no gurgling noise; face paler; skin hot and moist; pulse, 100. At night, tongue moister; one stool; pains more seldom, and less acute. The patient had up to this, taken two drachms of laudanum. In the night of the 17th, heat more intense; nevertheless, the skin still moist but tongue dry; two copious and fetid stools; abdomen not very sensitive when touched; a little gurgling, from time to time, still heard; pulse, 92. At night, pain increased in the right side, after an attempt to laugh; tongue moist round the sides; skin moist; pulse, 100; urine deep coloured and thin, with a red sediment, (tincture of opium.) The 18th, night good—the 23d, convalescence—and, at the end of November, complete restoration of health. She still, however, experiences a sensation of "dragging" in the abdomen, when she makes certain movements, as if there were some adhesions.

The attack so quick after an exertion, the lively pain in the right side, the gurgling noise, and the sensation of "dragging" remaining after her convalescence, and, in fine, the success of the opium, led the author to suppose the existence of perforation of the cœcal appendix.

Case 6.—In the body of an individual who had died of typhoid fever, was found, besides the anatomical injuries to the cœcal appendix usual in this disorder, a concretion of the size of a lentil, brown, glossy, and smooth, and weighing 3 centigrammes when dried. The mucous membrane surrounding this concretion was inflamed.

Case 7. Rathmann, a soldier, 21 years of age, was suddenly seized on the 10th of July, 1842, while drinking a glass of wine with his comrades, with a violent colic, and carried to the hospital: they administered a vomit, and Dover's powder, which had the effect of increasing his pain. On the visit of the physician, on the 11th, his state was as follows:—Smart pain in the lower part of the abdomen, especially towards the right side, and increased on the least movement, particularly by coughing; abdomen sensitive to the touch, hard, and tumefied; vomiting and great thirst; tongue slightly furred, red and sticky at the point; skin hot and moist; pulse full, 100; urine deep-coloured and thin; tenesmus; no symptom of hernia. (Twelve leeches upon the abdomen; laudanum, ½ drachm; peppermint-water, 4 oz. a tablespoonful every half-hour.) The 12th—sleepiness; pain less violent, and abdomen less sensitive; several vomitings. At night—pain less violent; cœcal region less tense, pulse fuller and less quick, 112; head light and easy. (Opium; 15 leeches.) The 13th—pain in the abdomen, desire to urinate, and fever less decided: continual thirst. (½ grain of opium every two hours, and ice to suck.) The 14th—night good; the abdomen endures pressure (opium remitted.) The 15th—bad night, without pain, except at the anus, when passing wind; abdomen insensible to the touch; cœcal region more distended; constipation for the last five days, yielding to a suppository; stool, hard, followed by fresh pain in the cœcal region; opium again exhibited. The 16th—a hard stool; pain in the cœcal region less decided; urine clear. The 18th—seven liquid and yellowish stools; vomiting, unattended with pain; little appetite; sudamina on the right side; sleepless for the last three days. The 19th—the patient eat a fourth part of his meal; increased symptoms; pain in the hypochondrium; a fluid stool, containing a lumbricus; vomited his dinner; belly hot; tongue red at the tip, and adhesive; pulse full, 92; urine muddy; sordes on the teeth and gums; (½ grain of opium every hour; 12 leeches upon the belly.) The 20th and 21st,—evident improvement; stools sometimes hard, sometimes fluid; vomiting, followed by increased pain in the cœcal region, which still remains distended. The 22nd,—a miliary eruption over the whole body. The 23rd,—condition very satisfactory, except the pain in the cœcal region, which increased at every movement of the right leg. The swelling of the right iliac fossa more and more decided, and assuming the form of an abscess, fluctuating in the centre, and hard at the circumference. (Poultice upon the tumour; 1 grain of opium every hour.) The 26th,—the tumour somewhat depressed; four or five liquid stools in the 24 hours. The 30th—the tumour has almost disappeared; the cœcal region, however, is still painful when touched; the liquid stools still continue. The 3rd of August,—full convalescence; there is no longer any pain or hardness in the iliac fossa, but, when pressed, a gurgling noise is heard, as in typhus; appetite good; stools natural. The 5th,—the patient left the hospital cured.

It would be difficult to find a successful case of the disease we are discussing, in which the symptoms led more manifestly to determine its diagnosis. Opium appears, in this case, to have been of undoubted service; the patient took 70 grains of it in sixteen days.

Case 8.—Straz, an artilleryman, a robust young man, entered the hospital on the 8th January, 1835, with fever and pains in the lower part of the abdomen, with which he was seized the previous night. (A diaphoretic mixture, and sinapism upon the belly.)—The symptoms rapidly increased; the fever and pain, principally in the region of the liver, became greater; the belly tumefied; constipation; ardent thirst (leeches, calomel, glysters); delirium; pains in the right leg and shoulder.—Died on the 21st.—On autopsy, the muscles of the belly, breast, back, and right side, were found converted into a mass of purulent corruption; the cœcum adhered to the peritoneum, and to the walls of the abdomen; there was an enormous abscess behind the cœcum: the pus had spread across the whole lumbar region, which was perforated between the muscles of the back. The cœcum was nodulated and swollen; and in the pus, mixed with fœcal substances, we found a stony concretion, about the size and shape of a filbert; its nucleus was a little French bean. The remaining viscera of the lower abdomen were healthy.

Although, at the autopsy, the vermiform appendix was not examined, M. Volz does not doubt that the concretion which occasioned the gangrenous inflammation of the parts was formed in the cœcal appendix, since it so much resembled that which is usual to this organ.

Case 9.—J. W. died of pulmonary consumption, the 2nd of April, 1842. Ulcerations were discovered in the intestines; the vermiform appendix adhered for five inches to the abdominal wall, and was ulcerated in different places; on pressure, fœcal matter escaped by an opening which was discovered in the middle of the appendix. At the point opposite to the adherence, the mesentery was of a deep-red colour. No concretions were found.

Case 10.—R. Fourrier sunk under tubercular consumption, on the April 5, 1842. Tubercles in the lung and cœcum; cicatrised ulcers in this intestine; appendix of a deep grey colour, and tumefied; being doubled upon itself several times, and presenting folds agglutinated together, and containing a thick matter, of a yellowish-white colour; the mucous membrane was grey, rough, and ulcerated; it was also adherent, in some places, to the peritoneum.

In the two above cases, the adherence of the cœcum was equally apparent, and the ulceration was not the effect of a foreign body, but of the softening of a few tubercles, which the author mentions as points of comparison. It follows, then, from the observations of M. Volz, that the bodies found in the cœcal appendix may be completely foreign, such as grain, fruit stones, or even biliary and stercoraceous calculi. The chymical analysis of these bodies (see Cases 3, 4, and 5,) gives the following results:—1st, a fatty substance, probably bile, or colouring principle; 2d, lime in the form of carbonate, or even of phosphate; 3rd, magnesia, probably *ammoniacal magnesian-phosphate*; 4th, chloride of soda. Their size varies from a lentil to a date stone; they are generally of an elongated shape, of a grey or brownish colour, are easily flattened between the fingers, when fresh, and are easily reduced to powder in a dry state. When cut, concentric and radiating

layers of a colour alternately brown, grey, brilliant, and dull white, were readily observed. When these substances effect the perforation of the intestine, it sometimes happens, and this fact is worthy of notice, that an adhesive inflammation in the surrounding tissues is produced, and an isolating cyst is formed around the foreign body. This will readily explain how, upon the autopsy, beside the traces of a recent peritonitis, those of a plastic inflammation, more or less ancient, are sometimes met with. Inflammation, preceding a peritonitis, by perforation, is not known; it is only when the peritonitis is present that we have the violent pain, generally sudden, of the whole of the lower part of the abdomen, but principally of the right cœcal region, which increases at the least touch, and at the slightest movement. The belly is hard and distended, especially the cœcal region; in a few hours, sickness, vomiting, and an insupportable thirst supervene; next, constipation—the skin is fresh—the pulse small and contracted—the tongue clean and moist, and in spite of the thirst, rather adhesive at the top. There is sometimes a remission of all these symptoms, but they become more intense, with every fresh attack, which may happen twice or three times before death, which may take place in 24 hours, or at the expiration of 15 or 16 days. The treatment is pointed out by nature, which, in the cases of convalescence, isolates the foreign body by a plastic substance, and prevents the escape of fœces into the cavity of the peritoneum. All that can augment, therefore, the motion of the intestines, and the presence of much fluid in their cavity, ought to be avoided. We should, therefore, guard against administering much drink, or purgative medicine, but should confine ourselves to means that will induce the most absolute repose, and will lull asleep, to use the expression, the vermicular motion of the bowels. It is evident, that for this service, opium is of the first importance. The examples we have quoted completely confirm this principle. The thirst should be relieved by small pieces of ice; the constipation should be counteracted by suppositories and glysters, never by purgatives. In case of the formation of an abscess in the cœcal region, we must endeavour to favour suppuration by the application of poultices.

THE MEDICAL TIMES.

SATURDAY, SEPT. 2, 1843.

Lex omnia suaviter et ad melius disponit.
ROMAN LAW.

WITH the conviction on our minds that the interests of the body of Surgeons were not unimportantly involved in the recent legal proceedings caused by the death of Lieut.-Colonel Fawcett, we have hitherto forborne publishing any observations that may have occurred to us, only because we have thought comments on the untried case as little delicate in themselves, as in their results serviceable to the ends of justice. A few words, now, will not be out of time, more than they will, we trust, be thought out of place.

On the actual state of the law, in reference to surgeons' professional presence at duels, we are, of course, not vain enough to venture an opinion of our own. On such a subject we would prefer to adopt, rather than to originate, a profession of faith; and in this modest state of mind we have appealed to our esteemed collaborateur, Mr. Healey, to speak for, and guide us, *ex cathedra*.

To the Editor of the 'Medical Times.'

On the question how far a surgeon, or other medical man, attending a fatal duel, may be regarded as *particeps criminis*, the following facts and inferences, briefly given, may not be without interest at the present moment.

As to the guilt of principal and second, on either side, very little matter has been left for doubt; but strange enough, frequent as has unfortunately been the occurrence of duels, in which the presence of some medical attendant has been uniform, in no case has it been decided whether such person shared in the criminality of the transaction, and if so, to what extent.

The guilt of the principal is thus laid down by Mr. Justice Foster in his Crown Law, 296—"Deliberate duelling, if death ensue, is in the eye of the law, *murder*, for duels are generally founded in deep revenge, and though a person should be drawn into a duel, not upon a motive so criminal, but merely upon the punctilio of what the *swordsmen falsely call honour*, that will not excuse; for he that deliberately seeketh the blood of another on a private quarrel, acteth in defiance of all laws, human and divine, whatever his motive may be."

So far the guilt of the principal is ascertained, and then arises the question of the second's guilt. This was formerly thought to be confined to the second of the principal, who gave the mortal wound. But there was doubt even then, whether there should be such a restriction, the tendency of authorities being to affix an even criminality to both. How that was, seems to be of little consequence, as the judges now appear to refer such questions entirely to the general doctrine of law concerning principal and accessory.

Then as to the guilt of third parties present.—The last decision of any consequence was in the case of the Queen against Young and Webber, in which Mr. Justice Vaughan, after stating, that there was no difficulty as to the law upon the subject, declared the question to be, "did the prisoners give their aid and assistance by their countenance and encouragement of the principals in this contest?" This aiding and assisting, &c. was necessary, in order to fix their liability as principals in the second degree, and consequent guilt.

In the above case, neither of the prisoners was the surgeon, and this fact, coupled with their arriving at the scene of the contest in company with the principals, remaining there during the contest, and at its termination, and leaving with the surviving principal, may justly suggest the question, how did they come to be there, and with what view, if not with the view of "giving their aid and assistance, by their countenance and encouragement, of the principals in the contest." It will be observed that neither of the prisoners took any active part; but their presence—knowledge of what was going on—their coming there for the purpose of being present at a duel, and leaving in company with the survivor, were facts left to the jury to draw what conclusions from them they thought proper, and they found the prisoners guilty.

Nothing so near the case of a surgeon has been decided as this; and when all is done, the whole question resolves itself into matter for the jury. There they were of opinion that there was evidence to warrant them in concluding that the prisoners had come to give their aid and assistance by their countenance and encouragement of the principals in the contest. In every respect but one, there would be in the case of a surgeon's presence, the same facts as in the case of these prisoners. And were there nothing more, the jury would probably draw the same conclusion they did before, that he was present to give his aid and assistance by his countenance and encouragement, &c. But there seems good ground for decision *in his favour*, in this circumstance, viz., that he incurs all those suspicious appearances for a purpose sufficient of itself to account for them—that of bestowing his skill if required.

Could the prisoners in the case I have cited, have shewn that they were present for some purpose, other than that of "aiding and assisting," it is to be presumed that they would have been acquitted. But the surgeon need not shew that, since it is a natural presumption, from the fact of his being a surgeon, that he came not to abet quarrel, but to avert the calamity of its consequences. Two circumstances may be cited as giving support to this view; first, among the many fatal duels followed by legal accusations, the surgeons who were professionally present, have either been subpœnaed as witnesses, or left unnoticed: secondly, the Attorney-General, Sir F. Pollock, after "carefully reading" the depositions, (which clearly shewed the presence of Mr. Gulliver at the fatal encounter,) declared, that after mature deliberation, he considered the charge of homicide could not be sustained against him.

T. PIERS HEALEY.

8, King's Bench Walk.

It would thus appear that the real state of the law on this important matter is *adhuc sub judice;* but certainly, if we may be allowed an opinion, the inference favoured by Mr. Healey is the one sustained by the great preponderance of even legal authority. But let us suppose that legal testimonies equably balance, the just and fair inference is not one whit the less obvious—for what absurdity can be greater than to put a man upon his trial, and peril his life for a matter which the law, *ab initio*, *doubts* to be a crime? But when marching from the contracted and arid limits of law, we enter the broad province of common sense and justice, how superbly ridiculous does the procedure appear! All the living, speaking voices of the law have, for months and years back, been chaunting in a marvellously harmonious chorus "the social necessity" under which men are bound to peril their fellow-men's mutilation or murder in private combat; yet the man who in no way identifies himself in the causes of these duels and not more in their concomitants than in solacing the injured, and making the chances of a fatal issue less, is presented by the law's agents to his countrymen as a murderer, and twelve of them directly invoked to transfer him to the gallows; that being his punishment—we believe—if he is to receive any at all. His attendance at the conflict is a painful sacrifice of self to duty—an obedience to the most ungrateful of professional requisitions only to be neglected with dishonour and inhumanity—it is an act of purest benevolence to men threatened, through their own or other's folly, with a disaster perilous to life,—and such is to be his reward! Swift, in his severest conceptions of an outrageous jurisprudence, never dreamed of anything so preposterous. Even without the lawyers' opinion to assure us, we could never reconcile ourselves to the notion that so absurd a thing was a correct construction of English law; and the circumstance that its first practical manifestation was by an English surgeon-apothecary, acting as a coroner—though a rather unfortunate testimony, coming from one of our body—does not for an instant shake our conviction. Rather the contrary. If Mr. Gulliver is the first surgeon that has ever been so disgraced and outraged, the precedent is, fortunately, of more value as

a warning than an example. The practice introduced by a new amateur lawyer—the coroner of West Middlesex—was rescinded by an old, practical, legal authority—her Majesty's Attorney-General.

In the review of the treatment to which Mr. Gulliver has been subjected, there is much to excite alike our sympathy and indignation, Every step taken by Mr. Gulliver was that of an able, straightforward, and honourable surgeon. Never did a medical attendant act more blamelessly than Mr. Gulliver, in reference to the whole of the melancholy transaction. The evidence shews that he forebore all part in it, but what his professional duties demanded. When all the other parties had gone either to seek succour, or consult personal safety, Gulliver was by the dying man, easing his painful respiration, inspiring him with hope and comfort, and doing all that medical skill of the highest order could do to save a valuable life—and to rescue the fugitives from the guilt of murder. In all this, the law must be a strange one which could see anything murderous: the Attorney-General, who knows all the law's refinements and appliances, could find no construction in it by which Mr. Gulliver's conduct could be made murder. Mr. Wakley is a more ingenious man; at least where a medical brother's comforts, and freedom, and life, are in question. Like every body else, he had his doubts,—he said so,—but, like himself, he knew what to do with them—he gave not the benefit, but the injury of them, to Mr. Gulliver. He entrapped the worthy surgeon—as Mr. Bodkin declared—into his power by summoning him as a witness; and, when present, engaged a policeman to keep him in custody—not on the coroner's, but the constable's responsibility. The reasoning by which he justified this step is the most amusing incident presented us probably in the annals of crowners' quest law. Mr. Wakley had heard of judges telling juries, in behalf of prisoners, that they must be governed only by the evidence actually adduced, and he must, of course, shew his knowledge of this point of law, by turning it *against* Mr. Gulliver. Mr. Wakley was certain, he knew beyond a doubt, that that surgeon attended only professionally; but, from the evidence adduced, the sapient coroner could not swear that "he did not attend as a principal in the duel, or, at all events, as a second," (see *Times*, July 7) and must, therefore, needs treat him as a principal. Knowing the circumstances of his professional attendance—of his persisting in attending the dying man before the ministers of justice—of his courting, rather than seeking to evade, justice—Mr. Wakley strains the law, perverts the evidence, and commits his brother-surgeon as a murderer! Nay, he refuses to do what the police-magistrate and the judges did instanter, on application, save him from a common goal, by admitting the unfortunate gentleman to bail. Was ever such a caricature on legality presented before an amazed public, or an outraged victim? Following the same principle, if the learned coroner found his own identity denied in evidence, he would act in his court as though he had sloughed his own character, and risen to the dignity and comparative honour of being somebody else, a felicitous delusion, not—we fear—within the honourable member's attainment.

We must conclude this hasty resumé by begging Mr. Gulliver to accept from us, in the name of the profession, our warmest sympathies under the indignities to which he has been subjected, and our generous congratulations at a result which all foresaw, and which is the legal ratification of all the ridicule and condemnation passed on the clumsy legal refinements of a coronatorial Dogberry.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 24th Aug., 1843.

Since the rumours caused by a celebrated trial, the public papers teem with instances of suicide and poisoning: should this mania continue, toxicologists will have an ample opportunity of ascertaining the best tests for the discovery of poison, without having recourse to animals. In my last, I mentioned a case in which the acetate of lead had been given, the two following have since then been recorded:—1st, a young servant maid, vexed at having been dismissed by her mistress, put into the soup she had prepared for the family, a considerable quantity of sulphate of copper; the attempt was discovered, and she tried to destroy herself, but was prevented from accomplishing the act, and was condemned by the criminal court of Rouen to the galleys for life. The second is that of a woman who, in revenge, attempted to poison three persons by means of arsenic, but, fortunately for them, failed. This raised suspicion as to the probable cause of the death of her husband, who had offered several extraordinary symptoms during his last illness. In consequence, the body, after having been buried a month, has been exhumed, and several parts submitted to analysis.

For the last 20 years, an apothecaries' shop has existed in the Rue Neuve St. Augustin, under the patronage of the English embassy. This establishment is kept by Mr. Richards, licensed apothecary, and by Dr. O'Grady and his sons, each person receiving a certain part of the profits, according to the sum laid down by him when it was formed. On the 4th May, 1843, a professor of the School of Pharmacy, at the instigation of the Prefect of Police, called at the shop, and found Mr. O'Grady, junior, alone. On being asked where Mr. Richards was, and who made up the prescriptions, he replied, that Mr. R. was in the country, but where, he knew not, and that the prescriptions were prepared by himself; consequently, Messrs. Richards and O'Grady have been prosecuted for infringing the law of the 11th April, 1803, and 19th Feb., 1805, and fined £8 (200 francs.)

A poor girl at St. Dié, Vosges, has just fallen a victim to hydrophobia, *from having washed a plate which had been licked by a dog affected with the disorder.* Several chaps on the fingers were the medium through which the hydrophobic poison entered the system.

Dr. Gruby has sent to the Academy of Sciences a memoir, "on the Nature, Seat, and Development of Porrigo Decalvans." The disorder called by the author, *microsporum Andouini*, has its seat principally in the head,—causes the hair to fall off—is characterised by round spots, covered with a white powder, and small grey scales. When examined with a microscope, the powder is found to be formed by a species of cryptogamiæ, which surround, and adhere very closely to the hair, forming a vegetable sheath. The cryptogamiæ are composed of stems, branches, and sporulæ; the presence of the last enables the observer to distinguish the branches from the stems. The sporulæ are either round or oval; in the former, their diameter is from 1 to 5-1000ths of a millemetre; in the latter, from 2 to 5-1000ths, or 4 to 8-1000ths of a millemetre. Where the cryptogamiæ exist, the hair becomes opaque, and so friable, that it breaks rather than bends, and falls off gradually. The part thus deprived of its natural covering, is of a greyish white colour, produced by the presence of a number of cryptogamiæ, which remain on the surface of the skin, and in the cells contained in that organ: no other morbid production exists, neither vesicles, nor inflammation, nor pustules, nor hypertrophy of the epidermis. This disease, being produced by vegetable parasites, must be placed in the class of phyto-parasita, near the tinea favosa, and phyto-mentagra; likewise, among the epiphyta, because it attacks the surface of the cuticle. It is to be distinguished from phyto-mentagra, because in the latter, the cryptogamiæ are situated in the follicles of the hair, and even round their roots, whereas, in the former, they generally surround the hair at a distance of 1 or 2 millemetres from the epidermis. They develope themselves with astonishing rapidity, covering, in the course of a few days, a spot with a diameter of 3 or 4 centimetres. The hair, as it grows, is attacked by the parasite, becomes of a greyish colour, and falls off. In some cases, the cryptogamiæ form a slight elevation of a quarter or half a millemetre, which has been taken for a pustule, a vesicle, or a secretion of the sebaceous follicles. On account of its contagious nature, it requires to be isolated with as much care as tinea favosa, or phyto-mentagra.

A case of pneumonia, complicated with chronic bronchitis, in a woman aged 50, has just occurred in the clinical ward of Professor Rostan, and shews the efficacy of copious bleeding, even in a patient so advanced in life, and affected with a chronic disorder. Cupping was employed once, and venesection three times: the quantity of blood drawn was about 44 oz. The vein was opened for the third time, the 11th day, and produced great relief, contrary to the opinion contained in one of Hippocrates' aphorisms, "that in acute diseases blood ought never to be drawn after the 8th day." The buffish coat existed to a greater extent in the last, than in the two previous venesections, and from recent researches on the subject, it has been proved, that the inflammatory crust is at its maximum, the second or third, not the *first time* the vein is opened.

Three years ago, several grocers were fined for having adulterated the salt they sold. The fraud has been discovered again by the professors of the School of Pharmacy, in their annual visits, according to law. Several samples of adulterated salt were seized; in three, crystals of sulphate of copper were discovered; in others, a salt obtained from the sea-wrack, which contains a minute quantity of iodine, and in others, powdered sulphate of chalk.

M. H. Larrey will represent the Society of Emulation at the ceremony for the inauguration of the statue of Bichat.

A practitioner of Lyons proposes the following novel remedy for apoplexy. A portion of the skull must be removed, in order that the atmospheric pressure on the brain may drive the blood downwards, and make it flow freely through the opening made in the vein.

M. Guersant, junior, in speaking of cataract, says, when this disorder developes itself in young persons, it is almost always congenital, and often hereditary. That the causes are, traumatic; in this case, one eye only is affected, its progress is rapid, and it is frequently complicated with adherence and immobility of the pupil: *influence of a vivid light on the eye of a new-born babe*, or *of a diathesis.* At other times, it comes on without any appreciable cause, in which case, it affects both eyes, either simultaneously, or at intervals, more or less distant, and the second begins to be formed before the first is ripe. The prognosis is favorable when there is no general nor local complication; less favorable if the patient is affected with rheumatism, scrofula, ophthalmia, erysipelas, or if the disorder was pro-

duced by external violence; very dangerous, if amaurosis exists, or if the eye presents an unequal surface, and is painful; as then it is, in all probability, cancerous; in these two last cases, the operation *ought not* to be performed. Contrary to the opinion emitted by Professor J. Cloquet, M. Guersant says, that the patient ought to be operated on as soon as the cataract is ripe, otherwise he is kept in an unpleasant position for years, without anything being done to relieve him; and one eye having, for a considerable length of time, been completely inactive, after the operation, the sight is seldom perfect, though both eyes are equally transparent. He further adds, as advised by Scarpa, Demours, and Dupuytren, that the operation ought never to be performed on both eyes, the same day. As to the *modus operandi*, couching is preferable, (especially in children, on account of their indocility,) because consecutive inflammation is less, and the hæmorrhage which follows less dangerous. After the operation, M. Guersant recommends local or general bleeding, derivatives, purgatives, &c. as the case may require, and contrary to the opinion of Scarpa, he says, the eye ought to be dressed every day, taking care to preserve it from the action of too bright a light, as then the surgeon is enabled to prevent the development of the different complications which the operation sometimes produces.

The municipality of the town of Montdidier, Somme, intends erecting a bronze statue of Parmentier, who rendered France the eminent service of introducing the succedaneum for bread—the potatoe, and to whom Louis XVI said one day, "The time will come when France will thank you, for having found food for the poor." The method he adopted is worthy of being recorded. Wishing the potatoe to be employed as food, he cultivated it in a considerable quantity of land, which he rented around Paris. He then offered the vegetable for sale, and subsequently gratis, but no amateurs were to be found. He next hit upon the following expedient, which succeeded. Placing keepers properly instructed about his fields, he posted a notice, stating, that whoever was caught taking a potatoe in his grounds, should be prosecuted. This was sufficient to create a wish to taste the forbidden fruit, which, by this stratagem, was brought gradually into general use.

The Committee of the Garden of Plants, purpose boring for an artesian well to the depth of from about 2,600 to 2,900 feet, in order to obtain water at blood-heat.

Dr. Rattier has been commissioned by Government to visit the several capitals of Europe, and to study the different sanitary measures adopted in each country.

Dr. Raceborski has just published an interesting memoir, "On the influence that latitude, climate, race, and individual constitution, exercise on puberty." The conclusions are:—1. That there are two causes especially which seem to have an influence on the appearance of the catamenia for the first time, viz., the temperature of the country —in warm countries it appears much sooner than in cold;—the constitution, or a diathesis—girls of a nervous or nervosa-sanguinous constitution, menstruate much earlier than those of a lymphatic.—2. That, not including such persons as are strong enough to resist all external influence, the mean temperature of the year acts powerfully on the system, and that each degree of latitude produces a difference of a month.—3. That whatever the influence of climate may be, it is more than probable that, even in the tropics, catamenia does not appear, on an average, before the twelfth year.—4. That the regularity of the life, the education, and the regimen of country girls, as well as their being constantly exposed to the open air, are sufficient to account for their menstruating later than the inhabitants of large towns or cities, subject to so many sources of excitement unknown to the former.—5. That race exercises a positive influence on puberty, but this gradually decreases in power, until all obey one law—that of the mean temperature of the country in which they live.

Academy of Sciences.—Sitting of the 21st August, 1843.—M. Flourens read a memoir, "On the structure of the skin in the different races." According to this learned academician, the skin of the white man is composed of the outer and inner epidermis, and the derma—no appearance of pigmentum. The skin of the Kabyle, Moor, and Arabian, presents the inner and outer epidermis and the derma, and, between the two last, the pigmentum, which is darker in the Arabian than in the Moor, and in the Moor than in the Kabyle. The skin of the Mulatto, the Negro, the American Indian, and that of an inhabitant of Tonga, who fell a victim to phthisis on board the *Astrolabe*, commanded by the unfortunate Dumont D'Urville, offer the same structure as the preceding ones. The skin of an Arabian affected with albinism, offered some peculiarities: in the diseased spots the pigmentum did not exist, whereas it was to be found as usual in the healthy parts. Thus, were it possible to conclude from this fact, it would appear that albinism is produced by the non-secretion of the pigmentum. In comparing the skin of the different races we find that, in the Kabyle, Moor and Arabian, it is essentially the same as in the Negro and American aborigines. The white man, himself, does not make absolutely an exception to the general rule, for the pigmentum exists in the skin which covers the nipple, and it is owing to a secretion of a certain quantity of this substance, that the skin of the sun-burnt European is so brown. Thus, it is evident that there is considerable analogy between the different races, and this tends to demonstrate that all mankind come from a common stock.

Professor Dumeril read a report on a memoir of M. Duvernoy on the structure of the teeth. From his researches, M. Duvernoy concludes:—That the pulp is the organ that secretes the ivory —that the enamel is deposited in successive layers on the ivory, by a membrane distinct from that of the capsule—that the ivory, as Leuwenhoeck asserted, is of a vascular, canalicular, and tubular structure—that the canaliculi are formed by a prolongation of the capsular membrane—that the substance which forms the ivory is deposited in the intervals which exist between the canaliculi —that these canals are gradually filled up, and that the development of the teeth does not depend on the periosteum of the alveolus.

M. Legrand addressed a letter, in which he states that a young man, to whom he had administered the stannate of gold, during five or six months, tinged the lint, with which his ulcers were dressed, of a purple colour, which was owing to the presence of the metal. That gold is eliminated, as MM. Danger and Flandin have asserted, principally in the urine, and, in some cases, in the saliva.

Academy of Medicine.—Sitting of the 17th July —Professor Velpeau presented a child, three days old (sent by M. Raimond), who, instead of the arm and fore-arm, has two stumps with rudiments of the hand; on the left side, there existed three excrescences, imitating fingers; and on the right, only two. The inferior jaw projected so far beyond the superior, that the infant could not take the breast. The mother, ætat. 38, has had five other children, all without a deformity: during pregnancy she was constantly ailing, and the delivery was long and difficult.—M Gueneau de Mussy read several reports on different secret remedies, and concluded that none were worthy of the approbation of the Academy.—M. Bouvier read a paper on the physical character of the muscles of the spine during life, in lateral deviations of the body, in which he contests:—1. The possibility of distinguishing muscular retraction from physiological muscular contraction.—2. The necessity and the efficacy of tenotomy in these cases.—M. Guerin, after explaining his doctrine on this subject, said that it was probably because the patient was not examined with sufficient care, that the retraction was not discovered, the more so, as this state of the muscle is sometimes very limited. To this M. Bouvier replied, that it was not for want of an attentive examination that it was undiscovered, but simply because such a state did not exist. M. Guerin then said, he would engage to read a series of papers, giving therein an exposition of his doctrines on each subject, beginning with the deviation of the spine, and discuss the subject completely with M. Bouvier, to which proposition the latter agreed.

Sitting of the 22d August, 1843.—M. Jobert de Lamballe read a report on a memoir of M. Morel de Laval, on luxations of the sternal or inner head of the clavicle.

GARLAND DE BEAUMONT, D.M.P.,B.L. & S.
Honorary Physician to the Spanish Embassy.

M. CHERVIN, M.D.

PROFESSOR CHERVIN has just died at Bourbonne-les-Bains. He was seized, about eighteen months ago, with a fit of apoplexy, which the strength of his constitution enabled him to shake off. The complaint of which he died was disease of the heart. The recital of his death, cannot fail to enlist the sympathies of all.

Chervin made truth his model. He was not the man to be dazzled by the false glare of sophisticated philosophy. Facts and strict reasoning were the idols which, from the deepest recesses of a serious heart, he adored.

The history of the life of Chervin is identical with that of his researches upon yellow fever. In the solution of the problem of the contagion or non-contagion of this malady, Chervin exhausted the activity of his mind. His scientific career does not, in fact, commence until the year 1814, when, as if having chosen his vocation in life, he sailed for the new world, with the design of studying the nature of its diseases, particularly of the yellow fever, and to collect a mass of facts which would enlighten the world upon the manner of propagation of this affection, and the value of sanitary regulation. He remained three years consecutively in these regions; he explored, step by step, as it were, the whole of the immense line of coast of the United States, upon a line of more than 37 degrees of latitude, or more than 600 French leagues; all the English, French, Dutch, Danish, Swedish, and Spanish colonies —Guana, and the Antilles. At each of these stations he held, as it were, a court of enquiry —visited every locality—studied its topography, and every particularity of climate—traced upon the spot the history of every epidemic that had prevailed—collected the written testimonies of the authors and authorities which might have preceded, accompanied, or followed the breaking out of the yellow fever; and proceeded in these researches with as minute care of detail as would be used in a court of justice. He consulted the opinion of the leading men in each country, and obtained from them written answers, attestations, and certificates. On his journey, he himself practised, and studied directly the malady, the object of all his enquiries, under alike its lightest and most aggravated forms—under symptoms that varied with the difference of season and locality, as well as through the different methods of treatment adopted by the physicians of the countries he passed through. After the completion of this stupendous pilgrimage—the detail of which astonishes the imagination, and which could not have been completed without overcoming difficulties both moral and physical, without number —Chervin found himself in possession of six hundred documents relative to the history of the yellow fever in the islands and upon the continent of America; and, satisfied with the results of his journey, returned to Europe in 1822, in order to render his discoveries of use, and to make his countrymen participators in the fruit of his labours.

He had scarcely arrived in France, when he found every mind more or less excited by the terrible visitation of yellow fever, which had for several months been ravaging Barce-

lona, and other parts of Spain. The terror inspired by this scourge—whose head-quarters were so near—was keen and general. Nothing was spoken of but the means of stopping its progress. The Government had sent into Spain, to watch the disorder, a commission, composed of MM. Pariset, Bailly, Francois, &c., which has since become celebrated, from the death of Mazet, the youngest of its members. The results of the enquiry made by this commission were decidedly favourable to the doctrine of contagion; and the Government, influenced by this scientific authority, so conformable to popular opinion, proposed to the Chambers fresh sanitary precautions. (Law of the 3rd of March, 1822.)

Chervin, whose ideas upon this point were diametrically opposed to those of the commission, and who believed himself to possess irrefragable proofs of his own views upon the subject, considered the moment favourable for taking a part in this great debate.

Nevertheless, faithful to his principle of observing everything, and seeing for himself, he did not content himself with the light and experience he had gained in his eight years of research in America. He set out immediately for Spain, resolved to set on foot an enquiry similar to that he had prosecuted on the new continent. He remained there three years. He visited all the places invaded by the epidemic; on the one side, Cordova, as far as Cadiz—on the other, from Ayamonta to Barcelona, and the country round about.

The result of this journey was a still more abundant collection of documents, of the same nature as those he had so assiduously collected in America. He returned to France with these materials, in 1825.

The instant he returned to France, he addressed a petition to the Chamber of Deputies, in which he prayed them to discontinue the erection of the new sanitary establishments, decreed by the law of 1822. This petition, coming in at the close of the session, was not reported. He presented it afresh, in 1826, on the opening of the session. It was referred, not without opposition, to the Minister of the Interior, with a recommendation to examine the numerous documentary proofs that accompanied it. On the 5th of April, not having received any answer from the Minister, Chervin wrote to M. de Corbière, to request him to nominate a special commission, which should be directed to "*examine the documents presented by him to the Chamber,*" and to decide if these "*documents were of a nature to cause the adjournment of the building of the lazarets intended to preserve us from the yellow fever.*" He at the same time submitted some views upon the formation of the commission. The Minister, although he readily listened to the idea of an examination of the documents, for the object pointed out by Chervin, did not acquiesce in his opinion with respect to the composition of the commission, but referred this task to the Royal Academy of Medicine. The Academy named a commission of nine members—the most celebrated men in the country—to examine the documents, and to give their opinion upon the necessity, or otherwise, of the sanitary precautions. Violent debates followed the report. The conclusions had the double "defect" of being contrary to the opinion and projects of Government, and of being a kind of refutation of the doctrines formerly held by the commission of Barcelona, which was exclusively composed of members of the Academy. Influence, political and personal, interposed. The printing of the report was adjourned. Afterwards, the will of the Government being more clearly pronounced by a ministerial letter, which interpreted, in a new sense, the object of the enquiry demanded of the Academy, the commission, against all evidence, and contrary to the report of M. Double upon the merits of the question, consented to modify its conclusions in the sense pointed out by authority. They suppressed all that had been said upon the subject of the lazarets—that is to say, all that was most important—and confined themselves to mere general praises of the labours of Professor Chervin, and to a sort of profession of faith on the words *contagion* and *yellow fever*.

Whilst these yellow fever polemics were under such vigorous discussion at Paris, the disease itself appeared at Gibraltar.

On the first intelligence of this attack, Chervin, who was as ready to fight with his person as his pen, at once demanded of the government the favour of being sent to Gibraltar, requesting, at the same time, of the minister, if his proposal were accepted, that he would *associate with him a physician whose opinion was contrary to his own, that is to say, favourable to the exotic origin of the contagion.* His request was accepted, but instead of one companion, they gave him two, viz. M. Trousseau, nominated by the minister, and M. Louis, by the academy. They arrived at Gibraltar the 20th November, 1828. Their common labours, consisting only of records of facts, were published in 1830. Since 1830, Chervin has taken part in all questions which interested, however remotely, the subjects of yellow fever and sanitary laws. In later years, the Academy of Medicine, of which he was made a member in 1832, frequently listened to discussions raised by Chervin upon this favorite, or rather sole object of his interest. He had of late again petitioned the Chambers, where, at length, his name was publicly recognized as that of the most able and courageous adversary to sanitary legislation. This tardy homage was the first acknowledgment of public gratitude he received. Three months after this manifestation, he died, under the hospitable roof of a confrére. Chervin strove against disease and death in the same way that he strove against his adversaries and their opinions, with a calm though active courage, and with a spirit of inexhaustible resources, and when, at last, he felt himself conquered, he gave up life with the philosophy of a wise man, and the resolution of a soldier. His last deed was the making of his will: he there simply and worthily avows his noble poverty, and leaves to his country, which he has so well served, the obligation of discharging his debts.

Chervin, we have already hinted, possessed neither intellect nor learning of the first class. To the purely scientific he has added nothing important, and has said nothing new even upon the disease which has been the special and exclusive object of his research. Nevertheless, he wanted neither talent nor shrewdness; he has shewn a great deal of both in the multifarious polemics in which it was his lot to be engaged. He possessed a correct judgment, an excellent memory, much *finesse*, and sound reasoning in argumentation, and above all, a perseverance that rendered him an inconvenient opponent. He was a lover of precision and detail in everything, and frequently turned a simple conversation into a regular scientific disquisition: a sincere friend, open and devoted, he was never guilty of the least of those petty *treasons* from which the friendly intercourse of even otherwise most honorable men, is not always exempt.

We may sometimes complain of the *absolutism* of his opinions, and the heat of his antipathies, but *never* of the uprightness of his character. Whatever judgment we may form of the intrinsic value of his opinions, in a scientific point of view, we cannot deny, that they have exerted a powerful influence upon public opinion in Europe and America. He has completely converted the medical public to *non-contagionism*, a doctrine that has now become all but universal, and if, as appears likely, this opinion effects great reform in the monstrous abuses in the sanitary establishments of Europe, to Chervin will redound the principal part of the glory, and his name will be associated with one of the greatest and most useful administrative measures suggested to modern governments by the light and researches of science.—*Gazette Medicale de Paris.*

PROPHYLACTIC EPISTAXIS.

To the Editor of the 'Medical Times.'

Sir,—May I request the favour of your inserting in your Journal, the following case of prophylactic epistaxis—if I may so express it—occurring to an old lady, 76 years of age, of very spare habit, preceded by decided symptoms of apoplectic warning.

I have the honor, &c.

John Langley.

10, Howland-street, Fitzroy-square, Aug. 21, 1843.

About three months since, I was called upon by a lady, 76 years of age, residing in North-crescent, Bedford-square, who stated to me that, while she was preparing to go into her bed, she was attacked suddenly with an insuperable drowsiness; so much so, that she was compelled to lie down, as she said, to recover herself; when she fell into a profound sleep, or rather stupor, from which she awoke at the end of nine hours, in a confused state, half-undressed, not having put on her night-cap, and having only taken off one stocking, having left the unextinguished candle to burn in the socket. She got up, dressed herself, stated the circumstance to her daughter, and, still feeling very heavy and dizzy, as she expressed herself, came over to consult me. Upon hearing this strange story, I was naturally apprehensive that some morbid pressure of the brain existed; and I said to her, "Madam, if you were not such a *fleshless, bloodless* old lady in appearance," (which really was the case) "I should advise you to be immediately cupped." She readily joined issue with me upon the propriety of omitting that remedy. Her pulse was 78, of no particular character. I prescribed a dose of calomel and colocynth, with a mixture of compound decoction of aloes, to follow—told her to bathe her feet in hot water—to taste no animal food, wine, or fermented liquor—to bathe her forehead with spirit and water—and to lie in bed with her head gradually elevated. She left me, promising compliance with all these directions. At 5 o'clock p.m, I was called to her, the messenger saying she was bleeding to death, having ruptured a blood-vessel. I hastened to her, and found her bleeding from both nostrils in a current, the quantity of pure blood then already passed, exceeded twenty ounces by three drachms: her pulse was quite up; I let her bleed on to thirteen ounces more, she instinctively wishing it: although not the slightest symptom of fainting, I unwisely plugged her nostrils, and left her much relieved of her head symptoms. About an hour and a half afterwards, I was again summoned, as she was vomiting blood. I found about half a pound of coagula, which had been ejected from the stomach, no doubt having passed posteriorly to my plugs. I examined the parts very carefully, and found there was not, now, the least blood passing. I allowed

the plugs to remain undisturbed—in addition, placed a small bag of pounded ice over the upper part of the nose, and left her, I considered, safe. At 5 a.m., of the next day, I was called up to her, the messenger saying she was again bleeding copiously. I found her bleeding very freely from the nostrils, she having removed my disagreeable plugs. I determined to let her bleed until fainting was induced: when she had lost twenty-two ounces more blood, the skin became moist, and she said, "I feel faint," but she did not faint,—the blood ceased to flow—she soon slept. I remained with her until 9 o'clock, watching her lest she might be losing blood from the posterior nares. She soon got quite well, and is at this moment in far better general health than usual, having lost some very distressing rheumatic pains, which she ascribes to the loss of blood, and so do I.

This case, I aver, bears e out in the principle I advocated in the paper of mine which you kindly inserted in your last Number. Had I, or any physician in London, prescribed for this old lady, a dozen leeches, *temporibus*, or the loss of 10 or 12 ounces of blood by cupping, it would have been considered a daring effort.—I say, let myself and my readers take pattern by the prescription and action of the *vis medicatrix naturæ;* let us reflect how she resisted the timid, irresolute hand, which unwisely endeavoured to restrain her unerring efforts to save life—and do likewise.

HOW DOES THE PORTAL BLOOD GET PROPELLED THROUGH THE LIVER?

There are three great vessels in the body, the ramifications of which terminate in capillaries, the portal vein, the pulmonary artery, and the aorta. In the capillaries of the portal vein the venæ cavæ hepaticæ originate; in the capillaries of the pulmonary artery the pulmonary veins originate; and in the aortic capillaries the spleno-hepatic vein* and its tributaries, (the gastric, duodenal, and mesenteric veins) and the superior and inferior venæ cavæ originate. These three sets of capillaries, the hepatic, the pulmonary, and the systemic, are the centres of three vascular systems—an hepatic, a pulmonary, and a general. Now if a physiologist be asked what propels the blood through the capillaries of the third or general system, he at once says the left ventricle; if asked what propels the blood through the capillaries of the second, or pulmonary system, he answers the right ventricle; and if he be asked what propels the blood through the capillaries of the first, or hepatic, system, he says, the left ventricle again. Thus he attributes to the left ventricle the office of propelling blood through two vascular systems, one after the other, and to the right ventricle the office of propelling blood through only one. He would have the left ventricle, which propels arterial blood through the capillary terminations of every branch of the aorta, also propel venous blood through the capillaries of the portal vein. He would make that agent which propels only one kind of blood through every other organ, propel two kinds of blood through the liver. He thinks it not enough that the left ventricle should so far serve the liver as to propel arterial blood through the capillary terminations of the hepatic artery, (which is quite as much as it does for any other organ,) but it must also propel venous blood through the capillaries of the portal vein. This is physiologists' physiology more than two centuries after the discovery of the circulation,—but is it the physiology of nature? Would the Great Anatomist—he who invented the heart, and planned the circulation—make one ventricle propel the blood through one vascular system, and the other ventricle through two?

There are but two organs in the body, the capillaries of which receive venous blood, the liver and lungs. The liver receives venous blood by the portal vein, and arterial blood by the hepatic artery. The lungs receive venous blood by the pulmonary artery, and arterial by the bronchial arteries. The liver and lungs, therefore, each receive two kinds of blood, venous and arterial. The arterial blood, which both organs receive, is of course propelled by the left ventricle. The venous blood which the lungs receive is propelled by the right ventricle. But what propels the venous blood through the liver?

We see that the vessel through which the venous blood passes into the lungs, consists of three parts; a recipient cavity, which is the right auricle—a propulsive agent, which is the right ventricle—and an afferent vessel, which is the pulmonary artery. Has the *liver* then no recipient cavity—no propulsive agent—no afferent vessel for its venous blood? We see that it has an afferent vessel, the portal vein; and that that vein originates in an isolated congeries of roots, the spleen, which is twice as large relatively to the liver in man in whom the axis of the trunk, and therefore the direction of the hepatic vessels, are *vertical*, than in quadrupeds, in which the axis of the trunk, and therefore the direction of the hepatic vessels, are *horizontal*. There is a fact which one can see without the help of a microscope! And what does it say? What does the *much* larger size of the spleen relatively to the liver in man than in quadrupeds indicate, but that the vein, of which the spleen is the root—the SPLENO-HEPATIC VEIN—is also the propulsive agent of, as well as the afferent vessel for, the portal or hepatic venous blood? This is also indicated by the whole vein being more distinctly muscular, and, therefore, more contractile than ordinary veins.† The spleno-hepatic vein is, moreover, far more distensible than ordinary veins; and, as it receives, not merely all the returning blood, but all the fluids also from the stomach and intestines, it may fairly be regarded as the recipient cavity for the liver.

One of two views must be taken of the hepatic circulation. Either the spleno-hepatic vein is the recipient cavity, propulsive agent, and afferent vessel for the portal blood—*tria conjuncta in uno*—or the portal vein is simply the afferent vessel, the left ventricle is the propulsive agent, and there is no recipient cavity? Which is the more reasonable and natural view? The first, which regards the hepatic system as a perfect and independent system—as a system not indebted to the propulsive agent of the general system for the propulsion of the portal blood—and which attributes to a remarkable vein peculiarities of function, equal in magnitude and importance to its anatomical peculiarities, which are very great; or the last, which regards the portal vein as nothing more than a common vein—the spleen as an organ with an incomprehensible function, or no function at all—the hepatic system as an imperfect and dependent system—and the left ventricle as capable of propelling blood through two consecutive vascular systems, and more through the second than into it? Yes, more *through* the second than *into* it; for as all the fluids pass from the stomach and intestines through the gastric, duodenal, and mesenteric veins, into the spleno-hepatic vein, *much* more portal blood must be propelled through the liver, than there is arterial blood propelled by the left ventricle through the capillary terminations of the cœliac and mesenteric arteries.—"Under which King, then, Bezonian!" Does the SPLENO HEPATIC VEIN propel the portal blood through the liver, or does the LEFT VENTRICLE propel more blood *through* the hepatic system than *into* it?

* The splenic vein, and its roots, or spleen, and the portal vein and its branches, are one vein—the spleno-hepatic.

† Mr. Paget, in his review of a certain "Maiden Essay," ridiculed the idea of the spleen or placenta being *contractile*; but, in his Microscopic Manual, he says, speaking of *veins*, "their muscular (contractile) power is very considerable." Now, no one knows better than Mr. Paget that the spleen and placenta consist chiefly and essentially of venous roots; and according to his Review they are not contractile, but according to his "Report" they are! Which are we to believe, Mr. Paget, the reviewer, or Mr. Paget, the author?

PERISCOPE OF THE WEEK.

(London and Edinburgh Medical Journal; Dublin Medical Journal; Hufeland's Journal; Oesterr; Medicinisch. Wochenschrift; Archiv. der Pharmacie; Muller's Archiv.; L'Experience; Baltimore Guardian of Health.)

Lateral Curvature of the Spine.—When the rage for myotomy, which existed some time back, was at its height, and muscles were divided in every direction, one operator, boasting that he had cut across upwards of forty muscles, ligaments, and tendons at one sitting, and on one patient, in whom he made twenty-eight different incisions, an operation was recommended, both in the medical journals, and in books specially devoted to the subject, for the cure of spinal curvature, by the division of the muscles influencing the spine. Judging *à priori*, every educated and thinking surgeon must have condemned the proceeding as useless, absurd, cruel, and even injurious; still, however, the operation was performed, and cases were recorded of apparent success. Few of these, however, we believe, will stand the test of time: the disease is so little calculated for relief by any such operation, that the wonder is how any one could be found to use the knife for its removal. Mr. Syme, of Edinburgh, says, when, some time ago, it was proposed to cure lateral curvature of the spine, by dividing the muscles of the back, and when cases in which this preposterous practice had been adopted were published, every honest and well-informed member of the surgical profession, must have experienced the strongest feelings of disgust and indignation. The only consolation was, that the absurdity of the proposal could not be long overlooked, even by the public, and would prevent much mischief from being sustained, until the salutary influence of time over such follies should interpose its usual protection of forgetfulness. The error consisted in believing, or asserting without believing that certain muscles moving the spine were in a contracted state, whereas the muscles throughout the production and existence of the curvature, are entirely passive. They, from the first, do not draw the spine awry, but allow it to bend, their fault being weakness, and not undue contraction, so that those requiring to be corrected, are seated in the convexity of the curve, instead of its concavity, and it is needless to add, could not be strengthened by division of their substance. Mr. Syme adds, in further denouncing this operation, that it should be banished from respectable practice, and if it survive this merited disgrace, be committed to those members of the profession who are base enough to take advantage of their patient's credulity, for the sake of gain, or unworthy notoriety. But still, there is one form of curvature of the spinal column in which an operation may be serviceable, to wit, that which is dependant on wry-neck, caused by contraction of the sterno-mastoideus. The permanent contraction of this muscle may produce lateral curvature in every degree, and may be remedied with no less ease than certainty, by subcutaneous division. The muscle has usually the feeling and appearance of a tense chord stretching from the clavicle to the ear: the head is bent towards the side affected, the face being turned in the opposite direction. The affection of the spine proceeds from involuntary elevation of the shoulder on the side affected, to lessen the strain on the head. This necessarily gives the dorsal part of the spine a corresponding convexity, and the lumbar portion bending in an opposite direction, to preserve the balance of the trunk, there results a lateral curvature in no respect different, as far as regards appearance, from its ordinary condition. If this deformity be treated by the

subcutaneous section of the sterno-mastoid muscle, before any alteration in the shape of the bones has occurred, a speedy cure will be effected, but if it be delayed until after that change has taken place, such will not be the result. The head, however, is at once set free, to the patient's great comfort, and through the gradual improvement of time, the trunk, unless arrived at full maturity, may, in a great measure, regain its proper conformation. Mr. Syme mentions a case that came under his notice last summer, of lateral curvature, with inclination of the head on one side, but on examining the sterno-cleido-mastoideus, it was found not tense and rigid, but soft and yielding. When, however, an attempt was made to raise the head,—the muscle resisted, and became tense; it was, therefore, divided, although with difficulty, and the following day, the patient's back was comparatively straight. In conclusion, it may be well to warn against mistaking for wry-neck depending upon muscular contraction, the distorted position of the head, which proceeds from caries between the occiput and atlas. Both diseases usually occur in young persons, and present to the careless observer somewhat similar symptoms.

Indigestion.—In a paper read before the College of Physicians of Dublin, Dr. Steele gives it as his opinion, that indigestion is sometimes caused by the pressure of air in the stomach, produced by an impediment to the circulation of the blood, the effused air deriving its source from the blood-vessels, and their contents. The gases found in the stomach and intestines are oxygen, carbonic acid, nitrogen, hydrogen, sulphuretted and carburetted hydrogen. Oxygen has been found in the stomach alone, its source being obviously in the atmospheric air swallowed with the food. The proportions of the remaining gases are extremely variable, but on the whole, it may be stated, that carbonic acid and nitrogen predominate, the former being frequently as high as 70 per cent., seldom so low as 30 per cent., the latter having 70 for its maximum, and 18 for its minimum, while sulphuretted, carburetted, and pure hydrogen do not occupy above one-tenth of the whole. The three last-mentioned gases, Dr. Steele believes to be natural excrementitious products, and not the result of morbid action. The gases evolved from the blood are carbonic acid and nitrogen, any cause by which the full amount of that fluid circulating in the vessels is diminished, acting in accelerating the absorption of air by it. Indigestion is caused by the presence of air in the stomach, according to Dr. Steele, by the interposition of the gas between the food and the parietes of the viscus, the consequence of which is, that the muscular efforts of the organ are without effect: the food, which may be of the most digestible materials, remains almost without motion in the most dependant part of the stomach; the chyme, instead of being forced through the pylorus, remains mingled with the half-resolved food, and that which, in the normal state, is a grateful and healthy stimulus, becomes a source of irritation, and the whole train of dyspeptic symptoms supervenes. For the same reasons, it is, that constipation so frequently accompanies this affection, for by the presence of air in the intestines, the muscular contractions by which alone their contents are impelled forwards, cannot act with their necessary effect, and the retention of fœces is the result.

The Early Application of the Child to the Breast.—Dr. Hocken enquires, in what mode does the early application of the child to the breast operate? To which question he answers, that a most beautiful and curious sympathy exists between the healthy stimulation of the breast by the infant and the uterus. The application of the child produces firm and permanent contraction of the uterus, which is even sufficient to restrain the most appalling cases of hæmorrhage, after the birth of the secundines, where the mother can see and recognise her own infant. It is by this healthy stimulation of the breast, which not only operates so beneficially on the state of the uterus, answering a favorable course, and preventing many accidents and dangers, by inducing its healthy and permanent contraction, but by its action on the nipple and gland preventing distention, and setting up the secretion of milk more favourably, as regards time and manner.

Health of Towns.—Dr. Copland believes, that the health of large towns is influenced by four or five particular circumstances; the first, and probably one of the most important, is the burial of the dead in the large towns,—the confined air, the general closeness of buildings, and the consequent want of ventilation; the circumstances connected with drainage and sewerage, and the contamination thereby occasioned of the water which is drunk by the inhabitants, so that, in considering the burial of the dead in large towns, we have to consider not only the exhalation of the gases and emanations of the dead into the air, but also the effect that such burial has on the subsoil, or the water drunk by the inhabitants. This is a circumstance which has not been so much attended to as it ought, till recent times, but which has, in fact, occupied the minds of the thinking part of the medical profession ever since the days of Hippocrates, who has a long chapter on the influence of air, water, and localities, on the health of communities, the chief agencies which vitiate or affect the health of the inhabitants of large towns.

Wound of the Left Ventricle of the Heart.—On the examination after death of the body of a man, who, after having been stabbed, had run 150 yards, and had survived fully half an hour, the following were observed:—two penetrating wounds were discovered on the left side of the chest, with sharp, and well-defined edges. The upper wound was one inch in extent, running obliquely between the third and fourth ribs, at a distance of $4\frac{3}{4}$ inches from the centre of the sternum, and of $4\frac{1}{2}$ inches from the clavicle. The lower wound was half an inch in extent, being situated obliquely between the fifth and sixth ribs, at a distance of $5\frac{3}{4}$ inches from the centre of the sternum, and of $8\frac{1}{2}$ inches from the clavicle. On dissecting back the common integuments and the muscles, the lower margins of the third and fifth ribs, were seen slightly marked by the cutting instrument. When the chest was laid open, three pints of blood, partly fluid, and partly coagulated, were found in the cavity of the left pleura, and the lung on this side of the chest was compressed to less than half its usual size. The lower wound had penetrated the pericardium, and passed through the entire thickness of the wall of the left ventricle, at the lower part of its middle third. It was still half an inch in extent, and tranverse in its direction. The pericardium contained only a small clot or two of blood; the upper wound had grazed the outer coat of the aorta, $2\frac{1}{2}$ inches from its margin, producing slight ecchymosis around. The blade of the knife, with which the wound was inflicted, was three inches long, and half an inch at its broadest point, gradually tapering to the point. Wounds of the heart are not necessarily immediately fatal. Many cases are on record, besides the one we have just quoted, where the wounded man survived a longer or shorter period, one of the most remarkable of which was that of a soldier, wounded at the battle of Corunna, who lived till after his return to England. All parts of the heart are not equally liable to be wounded; for in a series of fifty-four cases, collected by M. Ollivier, (*Dictionnaire de Medecine*) he found the right ventricle the seat of the wound in twenty-nine, the left ventricle in twelve, both ventricles in nine, the right auricle in three, and the left in one. The anatomical relation of the heart's cavities to each other sufficiently accounts for this. The right ventricle is situated, as it were, in front of the left, forms the greater portion of the anterior surface of the heart, and thus is more exposed to wounds, which are generally made in the front part of the chest. The auricles being still deeper seated, are again less exposed than either ventricle; and, of the two, the left has more frequently escaped injury than the right. Wounds of the heart causing sudden death, prove fatal either by the great hæmorrhage which attend them, or else if the aperture in the pericardium becomes blocked up, so that the blood cannot escape, that sac is distended, the heart is compressed, and prevented acting, and death necessarily follows. It sometimes happens, however, that life may be prolonged by the formation of a clot, temporarily closing up the wound in the heart, of which several examples are on record. The narrowness and obliquity of the wound also may prevent a large and sudden effusion of blood, and thus tend to prolong life, and a still greater safeguard exists in the disposition of the fibres of the heart, which run in different layers, the superficial being oblique from right to left, the middle oblique from left to right. This want of parallelism evidently favours the formation of a clot, for a wound of the left ventricle may simply separate the fibres of the superficial layers, and divide across those of the deeper layer, and *vice versa*. Should the wound, however, be transverse to the directions of these different layers, it will remain widely open, and give rise to a deadly hæmorrhage. Senac long since remarked that wounds of the heart closed more readily if they divided the muscular substance more obliquely. Provided the patient does not sink under the effects of loss of blood, new dangers await him in the occurrence of inflammation, and its numerous consequences. According as it is more or less violent, so will be the chances of prolonged life, or ultimate recovery. Ollivier has well summed up the consecutive effects. "In one case we have acute pericarditis, with exudation of false membranes, uniting the heart and its envelope, or followed by the effusion of a puriform liquid into the cavity of the pericardium, or of a reddish fœtid sanies, with thickening of the walls of that membrane. In other instances, the inflammation is confined to the wound, and occasions the formation of a circumscribed abscess; or it extends to the fleshy tissue of the heart, whose textures we find partially destroyed. Sometimes purulent matter issues from the wound of the chest; the wounded person may thus live for several months with a fistulous sore, and there is found, after death, a partial destruction of the heart's surface." The symptoms indicative of a wound penetrating into the substance of the heart are not very clear; the situation, direction, and depth of the wound may serve as a guide, and the surgeon will be able to form a more decided opinion, if there be a discharge of blood externally, issuing in interrupted jets, and isochronous with the pulsations of that viscus. In general, however, the hæmorrhage takes place into the pericardium or pleura.

The other symptoms presented are chiefly those attendant upon a great and sudden loss of blood from any source within the chest, but M. Joubert, of Lamballe, thinks that the following will prove a pathognomonic sign of cardiac wounds:—1st. Penetrating wounds of the heart give rise to a peculiar sound, resembling that which is heard in an aneurismal varix; 2ndly, they are accompanied with a constant convulsive affection of the muscular fibres of the heart; 3rdly, the sound indicated above ceases as soon as a clot closes the orifice of the wound; and 4thly, the muscular disorder of the heart continues after the formation of a clot. The prognosis in these cases must necessarily be unfavourable; still, although always dangerous, wounds of the heart are not necessarily mortal, so that in some cases hopes of recovery may be entertained, the more so if the wound has not penetrated deeply, or if the symptoms of the consecutive inflammation are of a moderate character. Velpeau, in his *Surgical Anatomy*, relates a very interesting case. A drunken coal-heaver died at the age of 50, in the hospital of the Faculty. Nine years before, in a quarrel, he was wounded by a knife in the left side of the chest. During several months it was thought that death would be the consequence of this wound. At last he recovered, although he continued subject to palpitation. On opening the body, the pericardium was found to be open, opposite the cicatrix of the walls of the chest, and the heart itself presented a fibrous line, which traversed the whole thickness of the right ventricle, in the situation corresponding to the loss of substance of the pericardium. In this case there is every reason to believe that the wound had penetrated the cavity of the right ventricle, and yet recovery took place. The ancients were of opinion that wounds of the heart were necessarily fatal. The local treatment should be directed to aid the formation of a clot, and prevent the entrance of air, by the immediate closure of the wound by strips of adhesive plaster, and the application of light dressings, secured by a bandage. With regard to the general treatment, syncope should not be too rashly interfered with, as the efforts of nature to clear the bleeding orifice might thus be arrested. Re-action once established, the indication then is by bleeding, and strict antiphlogistic treatment, to diminish the quantity of the blood, and to moderate the heart's action, if excessive, especial care being taken that the depleting measures are always kept in relation to the strength of the patient. Absolute repose is also requisite; and great care must be had for several days in the use of purgatives. In a case related by Mr. Featherston, slight efforts at straining at stool brought on a sudden aggravation of the symptoms, and speedy death, supposed to have been caused by the dislodgment of the clot.

Worms in the Blood of a Dog.—At a meeting of the French Academy of Sciences, M. Gruby exhibited, under the microscope, filiform worms, which he found alive in great numbers in the blood of a dog. They were nearly one half, or about two-thirds of a blood-globule in size.

Tubercular Masses in the Substance of the Heart.—Dr. Newbigging has met with tubercles about the size of a marble in the heart of a boy 13 years old; some of them had become softened in the centre. The lungs, mesenteric glands, and the peritoneum, were also the seat of tubercles. The patient had been under treatment for glandular disease of the neck.

Structure of Neuromatous Tumours in Stumps.—At a meeting of the Anatomical Society of Edinburgh, Dr. Bennett exhibited a neuromatous tumour, about the size of a hazel nut, which had been removed from the stump of a patient of his by Mr. Spence. It had caused the individual great agony, which was entirely removed by the operation. On making a section through the tumour, it was found to be composed of a dense white substance, of cartilaginous consistence. Examined microscopically, it was seen to be made up of numerous bands of fibres, enclosing an amorphous structure. The bands were composed of from twenty to forty filaments, crossing and recrossing each other, and terminating in loops. This filamentous structure differed in its arrangement from any other which Dr. Bennett had hitherto examined. About three-eighths of an inch of the nerve, to which the tumour was attached, had been removed with it, and this presented the same structure as that of the tumour. No remains of nervous tubes could any where be detected.

Hydrocyanate of Zinc.—Dr. Augustus Bartels has tried this salt in epilepsy, hysteria, and eclampsia, with good effects. He commenced generally with the dose of half a grain twice a day, and gradually increased it, till two grains were administered three times a day. Dr. Bartels, however, has met with one case in which even one-eighth of a grain caused such severe symptoms, that it was necessarily given up.

Elixir of Vitriol.—The aromatic sulphuric acid, the old elixir of vitriol, has been employed by Dr. Barach as an external stimulent, and rubefacient in several cases of neuralgia with advantage. It was generally used diluted with four times its bulk of water. It was directed to be employed as a liniment, and well rubbed into the parts affected, with the hand night and morning, so long as this could be done without exciting severe pain, which the application always produced at last. It acts as a rubefacient, causing a kind of erysipelatous redness of the parts into which it is rubbed daily.

Chloride of Palladium a Test for Iodine.—Baumann has made some experiments on the comparative sensitiveness of an acid solution of the chloride of palladium, and of the usual solution of nitrate of silver, and has found that one drop of the former produces a more voluminous precipitate than several drops of the latter in a solution of the iodide of potassium; and further, that when the solution is diluted 50,000 times, nitrate of silver still causes a white turbidness, and chloride of palladium, after a few minutes, black flakes; the dark colour of the precipitate with chloride of palladium renders it more easily perceptible. When diluted 500,000 times, neither of the solutions afford any re action.

Urea in the Blood.—Having taken the coagula of six bleedings performed upon males and females, labouring under inflammation of the lungs, with a view to procure a quantity of hœmato-globulin, Dr. Simon found that, by treatment with ether, alcohol, &c., and finally, the addition of nitric acid to the syrup or alcoholic extract, and desiccation under the air-pump, he procured a crop of crystals, which, under the microscope, presented themselves as an aggregate of rhombic tables, and which he discovered to be nitrate of urea.

Rare Cases of Strangulated Hernia. M. Gerdy has met with two very curious cases of strangulated hernia. In the first, the constriction took place in a narrow canal of seven or eight centimetres long, which existed along the course of the superior strait of the pelvis, and of the external iliac artery. The patient died after the operation. In the second, the hernia occurred on a level with the anterior superior spinous process of the ilium; it lay betwixt the external and internal oblique muscles, and was complicated by the presence of the testes, the adhesion of which to the parts around, had, in fact, opposed the farther downward passage of the small intestines, which had, therefore, ascended above the iliac spine.

The Teeth of the First Dentition.—Dr. Harris, in treating upon the importance of the preservation of the first teeth to the health and durability of the second, says:—It is very important that the deciduous teeth should be preserved until they are removed by the absorption of their fangs; because in their health is involved the durability and health of the permanent teeth. When the first teeth continue healthy, until by the destruction of their roots they are removed to give place to the second, these latter are generally well arranged, of a hard and firm texture, and, in consequence, less liable to disease than when developed in the midst of unhealthy parts, as they usually are when the former are allowed to decay, for it is to this that the morbid affections, which are so often met with during early childhood, in their sockets and surrounding gums, are in a majority of cases attributable. The teeth of the second set are formed behind and beneath those of the first; and any unhealthy condition of these latter, or their contiguous parts, proportionate to its nature and extent, disturbs the process of the formation of the former. The earthy material that enters into their composition is thereby diminished.

Treatment of Syphilis.—Dr. Newbigging draws the following conclusions respecting the treatment of syphilis:—1st. That the venereal disease is curable by mercury.—2nd. That the duration of the treatment is shorter under the non-mercurial plan,—3rd. That the cases of secondary symptoms, after the simple treatment of primary sores, are less frequent; and, when they do occur, are of less serious character. He says it has been found that whilst in cases treated by mercury, the occurrence of secondary symptoms was as one in seven, in those treated without the mineral, it was as one in thirteen. The general experience of the profession is directly contrary to the conclusions drawn by Dr. Newbigging.

Late Hours in Business.—Aylott, Chancery-lane.

This is the title of an unpretending little brochure that has been submitted to our notice. That the modern system of "doing business" at late hours has a seriously injurious effect upon the physical organisation of shopmen, cannot, for a moment, be called in question. The little pamphlet we have before us, after a startling announcement of the extent of the evil, seriously and earnestly points out the remedy. The style is generally tasteful—in parts eloquent. We cordially wish the writer *success* in a work of as much practical benevolence as any of the more showy movements of this philanthropic age, and unlike most of them, whose triumph would incur to no division of society a loss. If the improvement were uniformly adopted, tradesmen would not be losers, and if short hours led to the employ of more persons, all the better for the comforts and independence of the labouring portion of society, and for that other class who have to provide for them, when out of employment, in prisons and union-houses. The plan proposes, indeed, a partial solution of the great problem, how the labour of mankind may all be well done, yet leave none idle, and none overworked.

The Sale of Alum to Bakers.—Chemists and Druggists are not liable to a fine for selling alum to bakers, although bakers are subject to penalties and imprisonment for using it in the manufacture of bread, or even having it on their premises. They are liable to have their premises searched in case of any suspicion arising, and are prohibited, under severe penalties, from offering any resistance to such search. Nevertheless, the law is inoperative, as bakers' bread is seldom if ever free from alum.—Various contrivances are adopted to evade the law. Alum is called by bakers "stuff," or "the doctor." It is usually bought by the master, who deposits the proper quantity for each batch in some corner of the premises, where the foreman finds it at the proper time. In some houses the master is subject to a fine in case of his neglecting to provide "the doctor," which fine is the perquisite of his journeymen. By these and other precautionary regulations, the inconvenience of detection is avoided, and although every person knows that alum is always used, no one is in possession of positive evidence of the fact, and all parties concerned keep their own counsel, being bound by that kind of "honour" which prevails "among theives." The masters are interested in using "the doctor," because they can by this means improve the appearance of an inferior flour, and the men are equally interested in the matter as the bread is made with less trouble. The parties aggrieved by this practice are those who consume the bread. Dr. Pereira observes:—"Whatever doubts may be entertained as to the ill effects of alum on the healthy stomach, none can exist as to its injurious effects in cases of dyspepsia. Bread which contains alum is objectionable, not merely on account of the salt, but because it is generally made from inferior flour, which, when mixed with yeast and water, and formed into dough, quickly passes through the stage of vinous fermentation, and becomes acid.

College of Surgeons, London.—By a recent regulation, students have now only to prove having studied Anatomy and Physiology, by attendance on lectures and demonstrations, during three winter sessions, of not less than six months each. The courses of Surgery, Physic, Chemistry, Materia Medica, and Midwifery, were formerly to have consisted of seventy lectures each: the number is now undefined. The Council have also intimated to teachers that they wish for no vacation or interruption of studies at Christmas.

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of Gentlemen admitted Members on Monday, Aug. 21st, 1843:—

J. T. Roberts, R. T. Wylde, J. T. Winnard, T. J. Heaton, N. Chadwick, C. A. Mercer, M. Healy, T. E. Drinkwater, F. D. Mudd, W. Hunter, G. W. T. Jarvis, T. Clark.

Admitted Friday, August 25th, 1843.

W. T. F. Ivey, T. Burgess, E. Cottingham, E. L. Ogle, E. Kittson, W. Poole, C. A. Wakefield, P Field, B. H. Jagoe, W. Pollock, T. Spain, G. Padley, T. B. Keetley, W. Watson.

Admitted Monday, August 28th, 1843.

E. T. Rendall, B. Barrett, F. Wildbore, T. Orton, C. R. Morgan, T. H. Baker, T. Engall, C. Cooper, T. C. Lewis.

There will not be another Court until Oct.

Sir Astley Cooper.—The College of Surgeons, London, has bought this distinguished surgeon's anatomical museum from his nephew, Mr. Bransby Cooper. The purchase money agreed on is, we understand, nearly £2000.

Obituary.—Sir Thomas C. Morgan, M.D., at William-street, Lowndes-square, on the 28th August.

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LECTURES—

Medicine—G. Burrows, M.D.
Surgery—William Lawrence, F.R.S,
Descriptive and Surgical Anatomy—F. C. Skey, F.R.S.
General and Morbid Anatomy and Physiology—Mr. Paget.
Superintendence of Dissections—Mr. M'Whinnie and Mr. Ormerod.
Chemistry—Mr. Griffiths.
Materia Medica and Therapeutics—G. L. Roupell, M.D. F.R.S.
Midwifery and Diseases of Women and Children—E. Rigby, M.D. F.L.S

Summer Session. 1844, commencing May 1st.

Botany—F. J. Farre, M.D. F.L.S.
Forensic Medicine—W. Baly, M.D.
Practical Chemistry and Natural Philosophy—Mr. Griffiths.
Comparative Anatomy—Mr. M'Whinnie.
Midwifery, &c.—E. Rigby, M.D. F.L.S.

CLINICAL LECTURES.

On Medicine by Dr. Roupell and Dr. G. Burrows.
On Surgery by Mr. Lawrence and Mr. Stanley.

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Jan. 13, 1839.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 206. Vol. VIII. LONDON, SATURDAY, SEPT. 9, 1843. PRICE FOURPENCE. Stamped Edition 5d.

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SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE XII.

An aliment which is composed of a mixture of nutritive substances and of substances opposed to the fermentation of digestion, is still more indigestible than a diet which is unsuitable, from some fault in the proportions of the two complementary elements of the stomachic digestion. In fact, the innate instinct of the stomach, the appetite which forewarns us of its wants, leads it to require much where it can extract but little. The alimentary mass presses with its full weight upon the walls of this organ ; it augments in volume in consequence of the heat of the surrounding medium, as well as from the effects of fermentation, the products of which are left unabsorbed by the organs. The digestive organ becomes distended and puffed out; the tension compresses the elementary cells of the digestive walls, and consequently paralyses in a proportional degree their power of digesting. The stomach pushes backwards the surrounding organs: the intestines, the heart, the liver, the lungs, and the large veins and arteries. What a host of accidents may we not have accompanying so extensive a disturbance? Meteorisation, eructations, heart-burn, palpitations, determinations of blood, apoplexy, asphyxia, &c., effects which are dependant on a mechanical cause, and which may be effectually removed by simple vomiting. These principles once acknowledged, we may easily divine why certain of our habitual aliments are less nutritive, and consequently more heavy than others ; this arises from the relative quantity of nutritive principles which they contain within a given volume. For instance, the green French bean is more of a delicacy than an aliment ; and the more forward it is in its growth, the less nutrition does it contain; for, in its advanced state, the glutinous tissue of the pod being transformed into ligneous tissue, the complementary proportions of the two fermentescible substances have become altered. The white bean already commences to rank, among alimentary substances properly so called. The cabbage is less alimentary than the French bean; so much does the indigestible matter abound in its tissue, while the nutritive substance is greatly diluted with water, in the vessels which elaborate it; a cabbage weighing two pounds is not equal, in point of nutrition, to an ounce of veal. The flesh of the young calf is much superior to that of the ox; it is richer in tender and glutinous tissues, as well as in saccharine principles; it contains so little inert and infermentescible substance, that the invalid digests it without effort. The flesh of the cow is hard, tough, and indigestible, for its muscular cells have been drained of their saccharine, or saccharifiable principle, by lactation, similar to what we should find in a spongy tissue, as a result of expression. By means of this explanation, we may understand how the legumina, which are green and foliaceous bodies, are less nutritive than mealy substances, substances which are rich in saccharifiable and glutinous products; also, how farinaceous bodies are less nutritious than beef or mutton ; these less so than lamb or veal ; in fine, how it is that carnivorous man does not equally relish all kinds of meat, but has a horror of some. We should eat horse-flesh without repugnance, if it equalled beef, in the proportions required for the elaboration of our stomach. Along with saccharifiable substances, we may class fatty, and especially oleaginous bodies, on account of their fluidity at a slight elevation of temperature. When fatty bodies are in excess, and in a proportion which leaves them without their fermentescible complement, this excess, acting as a varnish upon the digestive surfaces, interferes with the accomplishment of digestion, and produces a sensation of uneasiness or of fulness. Certain kinds of fish are apt to produce this effect with some people, unless their digestion be assisted with various seasonings or complementary substances. In some fresh-water species, as also in the cartilaginous salt-water fish, such as the skate, the muscular tissue is too tough and too hard, to furnish towards digestion its habitual complement of fermentescible substance.

2o *Substances supplementary to digestion.*—These substances are such as are added to the aliment, with a view of supplying the incomplete proportions of the alimentary substance. The culinary art is but an auxiliary to nature as altered by civilisation. In the state of nature, the animal is organised to digest without preparation; the same may be said of animals which digest, at least for a considerable space of time, without drinking; they find their drink in their kind of alimentation. But to confine ourselves more especially to digestion in the human species, we may lay down, as the primary supplement to digestion, the aqueous drink, a necessary vehicle of every species of fermentation.

Drinkable Water.—The less a water is impregnated with salts, the more drinkable it is, whether as regards its quality as a menstruum, whether as a vehicle, or as a solvent of digestive substances; for the capacity of saturation of a liquid is limited; its solvent property diminishes, in proportion to its saturation. Spring-water, which is filtrated through the gravelly layers of the soil, is more favourable to digestion than river water, provided that it traverse only granite or its *detritus*, sand, or pure chalk, and that it does not run along a bed formed through strata of another nature. If the contrary be the case, the water may become medicinal; but it ceases to be drinkable. There are some rivers and streams which preserve their original purity, almost up to their mouths, inasmuch as their beds are hollowed out of rocks possessing but little solubility; such is the water of the Rhône; such also that of the Sorgue, so frothy where it disgorges itself at the fountain of Vaucluse, but so pure and so limpid a hundred paces distant, and thence throughout its entire course; such the water of the Arcueil, which reaches Paris, in a delicious state of purity, preserved by its stony conduits from all obnoxious influences, as well as from the impure contact of the Bièvre and of the mud accumulated in that valley. The water of the Seine, which our shallow fountains distribute to us with so much parsimony, should be invariably taken from the median line of the current, and very near to its surface; it, however, contains even then too much salts, especially after any great inundation, to be drinkable in the full acceptation of the word; while the new mode of filtration deprives it, not of the indigestible salts which it contains, but of the atmospheric air, the presence of which renders drinkable water digestive. An unsuccessful attempt has also recently been made to alter the nature of this water, by adding another salt to those which it already possesses in such great abundance. But what else can be expected, where the controul of these departments falls into the hands of men, who are totally ignorant of the subject. It is quite certain that we do not yet possess a good system of filtration on a large scale.

The water of our wells is *raw*; the Seine-water is *insipid* or *earthy*; canal water is *brackish* and *marshy*. The one is *indigestible*, the other *drastic*, and the third *feverish*. Water, when loaded with sulphate or carbonate of lime, paralyses the digestion of certain substances, especially that of the *leguminosæ* (such is the water of our wells; at least of the wells, in which the water accumulates and remains stagnant at the bottom. It is quite another thing, when well-water is a running water, and which is renewed every instant; in this case, well-water is the same as spring-water.) Water which receives the drainings from our streets, our roads, and our common sewers, diverts, by the action of its sulphurets, the digestion, from its regular course of saccharine fermentation (such is the water of the Saône, of the Marne, of the Loire, and of the Seine); stagnant water becomes ammoniacal and brackish, a vehicle for the products of the innumerable and varied combinations of ammonia with phosphorus, sulphur, chlorine, &c., so many salts which the stomach decomposes, to the detriment of its tissues, and which the blood absorbs, to the deterioration of its properties. Moreover, the ammoniacal is incompatible with the alcoholic fermentation. Neither distilled nor rain-water are very digestive. Water is not pure, because it is reduced to the simple elements of water; its simplicity is injurious to its solvent powers. If you would give to it the qualities of spring-water, you must expose it to the atmospheric air, so that it may become impregnated with it, as also with a small quantity of carbonic acid; and this exposure should take place in a calcareous vessel, with a view of its absorbing a certain quantity of earthy carbonates. If you would have a good system of filtration for impure water, you must not use charcoal, which subtracts from it its gases and its salts; nor would you depend on woollen strainers, which can only deprive it of its grosser impurities, and not of its putrid and ammoniacal salts. Imitate nature, which transforms into spring-water, by its own simple system of filtration, the most muddy waters of the most marshy ponds. With what elements does it bring about this complete change? Its filter is composed of layers of sand with banks of porous chalk ; its principle consists in decomposition, and in the sudden lowering of the temperature. Impure water, which ferments in the heat of the air, instantaneously deposits its products, when passing through the colder medium of the subterraneous strata. Suddenly transpose the water, which had been exposed to the heat of a summer-sun, to a temperature of 10 deg. (cent.), and you will see it almost immediately throw down a sediment; for the solvent power of a liquid is proportioned to the elevation of its temperature. Every grain of sand is a refrigerant, in which the impurity of the contiguous drop of water is deposited; every molecule of calcareous carbonate is a disinfectant, by means of a double decomposition.

Suppose now that we had to filter the water of the canal, on the heights of *La Vilette*; how should we proceed about it? We should open a basin of a size proportioned to the quantity of water required for consumption, but of a depth of at least ten *metres*; we should pave the bottom and sides with the common mill-stone, as dug from the quarry, cemented together with slaked lime; we should lay down a bed, of at least one *metre* in thickness, of blocks of mill-stone and of sandstone. Over this, we should place a horizontal layer of loose slabs of lime-stone, then one of porous lime-stone, two *metres* in depth, filling up the points of juncture simply with fine particles of this stone; and above all, a bed of river or Men-

don sand, of a depth of three or four *metres.* Having formed a roof to the building, we should then be enabled to collect, by means of tubes connected with the base of this cistern, water as pure as that of any spring. For domestic use, filters made of lime-stone or chalk produce this effect, but in a very slow manner. A change of water, for drink, affects the stomach, in the same way as a change of diet. It is necessary that the digestive organs become used to it. We have already observed that gaseous waters are powerful auxiliaries of digestion, and that eructation need not of necessity follow this ingestion of carbonic acid; whence we have concluded that the carbonic acid gas is absorbed by the stomach, and that this organ consequently resembles, in respect to its respiration, the foliaceous organs of the plant. We should add that the use of these gaseous waters corrects the impurity of the waters used for drink, by a species of precipitation and decomposition.

Green Fruits, Unripe Grapes.—The ingestion of these aliments produces dysentery, and may even cause an affection similar to *volvulus.* For the tartaric acid, with which they are loaded, precipitates the salts of lime, in the form of a rough, insoluble substance. If this takes place in the intestines, and the passage does not even become intercepted by the calculus, its asperities will injure the surface of the bowel; hence the dysentery which is induced. If it intercept the passage, then we have *volvulus*, and all its consequences. The same may be said of sour wine when loaded with too much free tartaric acid. You may remark how the vesicular pellicles of each grain of the grape resist, from their texture, as well as from their chemical nature, the disorganising action of the process of digestion. They pass then, intact, into the organ of alkaline digestion—the duodenum; thence into the colon, the organ of fœcal digestion, a digestion equally alkaline as the second. These pellicles then convey an acid principle, to those tissues which normally aspire liquids only in an alkaline state; their presence gives to the chyle and its other transformations, a quality which interferes with the healthy action of the tissues. Consequently, the immoderate use of unripe fruits, leads first of all to diarrhœa, and then to dysentery, by reason of the mechanism which we have just been explaining. Diarrhœa arises only from a deviation of the intestinal digestion; it is a transposition of the acid fermentation; and, as that which is rejected by the intestines, should be expelled outwards by the same force of repulsion, if any mechanical obstacle be formed to the passage of the matters by the ordinary mode, the diarrhœa will assume the characters of *ileus* or of *volvulus*; and the patient will eject by the mouth what should have been voided by the anus.

Fermented Liquors.—In the state of nature, pure water is the best drink for every living being. Digestion when strong, and of a normal character, has no need of any other vehicle; and in hot countries, the peasant, as well as the traveller, finds in water, as a drink, the most delicious qualities, and which render it to him far preferable to wine. To his taste, water is the most delightful of all beverages, and wine is merely regarded as a medicine; and, indeed, in our state of civilization, wine possesses no other character: it is a corrective to an imperfect digestion; it is an artificial addition of a certain quantity of alcohol, to a mass of aliment which is slow in producing it; for stomachs which are altered and deteriorated in consequence of civilization, are wanting in that energy, that vital influence which, in the man of nature, suffices of itself, without any artificial aid, in fulfilling the purposes to which it was destined. The inhabitant of the North has greater need of fermented liquors than the inhabitant of the South; as much because the cold depresses the functions, as that, transpiration being less abundant in climates with a low temperature, the alimentary mass gives up less quickly its aqueous particles, which serve as a vehicle to its fermentation. Wine holds the first rank among auxiliary drinks; then beer, provided it be well impregnated with hops, and this for reasons which we shall explain lower down. Beer, being less alcoholic than wine, and more loaded with carbonic acid, as well as with the glutinous and saccharine elements of digestion, is not only tonic, it is also nutritive; in drinking it, we make a kind of liquid meal. The kwass of the Russians is a beer made from rye, instead of barley. Cider and perry, less alcoholic than beer, possess an acidity which is not suitable to all stomachs, and require a habit for drinking them, which the inhabitants of Normandy have contracted from their infancy. Fermented liquors are not limited in their action to the alimentary mass; their excess passes into the current of the circulation; and they there produce, by the coagulating action of their alcohol upon the albuminous part of the blood, all the phenomena of intoxication. In fact, the tissues of the vessels assimilating to themselves the aqueous part of the blood, the alcohol thus concentrated acts with its full energy; and the coagulated albumen here and there intercepts the circulation. But this perturbation not being uniform, the antagonism which maintains us in a state of equilibrium is necessarily destroyed; the animal reels, being swayed to the right, to the left, behind, or forwards, according to the irregularities in the effects of the alcohol. The progress of intoxication increases within a certain time, and the debauchee, who rises steadily from the table, will probably fall down at a few paces distant, in consequence of the alcohol passing from the stomach into the circulatory system. The limbs become swollen, the flesh assumes a blue colour; for the coagulated clots in the capillaries resist the passage of the blood from the arteries into the veins; the stomachic membrane losing, by the action of the alcohol, the faculty of aspiration which maintained it in a state of humidity, remains inactive, and, as it were, paralysed; it repels that which it should attract; and all the muscular efforts, compressing this organ, assist it by their action in bringing on vomiting; a desirable result, which frees the man from the cause of his torture.

There are not two ways of manufacturing fermented liquors; fermentation is a process *sui-generis;* every art which departs from it, is a falsification. The chemist may attempt, by synthesis, to re-combine the products, which he believes to have isolated, by the analysis of wine; but that man whose stomach may be unfortunately subjected to such a chemical production, will not be long in perceiving its evil effects, and thus becoming convinced that human art is ingenious in manufacturing poisons; while nature alone possesses the power of engendering nutriment. Alcohol, when super-added to water or to wine, never mixes with them, whatever we may do, in the same manner as in the process of fermentation; who knows then, whether the alcohol, which we obtain by distillation, exists originally under the same form as that presented to us in the receiver? However this may be, we find that our Parisian wines, the strength of which is increased by the wine-merchants who add eight or ten quarts of alcohol to the cask, are never so beneficial to the stomach as natural wine, even that of Suresnes. The stomach, in fact, quickly absorbing the aqueous part, sets free, with the same celerity, the alcoholic portion which was not combined, but barely mixed with the other; and this alcohol, being deprived of its water, cauterises the mucous membrane, in the same way as rectified alcohol would do if swallowed at a draught. Some idea of the difficulty attending this subdivision of the alcohol in fermented wine, may be formed by the following fact:—After having placed in a stand a cask of good wine, say of 150 *litres*, divide it into three partitions of 50 *litres* each. If you analyse separately these products, you will find that the middle portion contains more alcohol than either the upper or the lower; does this arise from the fact that the capacity of saturation is in proportion to the mass, and that the middle partition has a greater capacity than the upper and lower partitions? I know not; but it is undoubtedly true that *connoisseurs* always take care to keep distinct, and frequently to use as a dessert-wine, the central third of their cask.

If the change of water as a drink is capable of producing a degree of disturbance in our digestive functions, a change in the quality of wine acts with still more injurious consequences. Wine, in fact, acts either as a poison or as an auxiliary to digestion, according to the proportions of the mixture. Now, its action will depend on the habit of the individual; a wine which suits one drinker, will be too strong for a person of the opposite sex, or one who is not accustomed to drinking. Judge by this of the effect which must be produced, on the Sunday, upon the stomach of the poor mechanic, the drinker of water during six days of the week, by the alcohol which the distiller procures from potatoes, and which is diluted by the wine-merchant with pump-water on the Saturday-evening, and hastily coloured with the myrtle-berry? You will also understand why the labourer of the south of France is scarcely ever drunk, whereas the mechanic of Paris rarely leaves the shop of the wine-merchant in a sober condition: in the south, the wine is excellent and cheap; everybody can procure it, and, consequently, it is never adulterated; the labourer is accustomed to it, and is never compelled, from the dearness of the product, to discontinue its use. A celebrated academician, who depended on statistical figures alone, one day observed to his audience, to prove how much the morals of the people were corrupted, that, in the *Rue Mouffetard*, you met with a wine-shop every twenty steps; whereas, in the *Chaussee-d'Antin*, you scarcely found a wine-merchant at the corner of the streets. A mechanic, who was present, replied: "That this depended on the fact that, in the *Chaussee-d'Antin*, every inhabitant has his cellar, stocked with the best wines; while, in the *Rue Mouffetard*, the people have no other cellar than the wine-shop. But, in the *Chaussee-d'Antin*, every rich man consumes more, by himself, at a single meal, than a poor devil drinks, in the course of three weeks." The justice of this observation elicited the acclamation of the whole auditory, even including the Professor himself.

Sobriety is a relative quality. That man is sober, who eats and drinks no more than is necessary for him, at the same time that what suffices him, would produce indigestion in another. I have seen beings pitiable in themselves, destitute of resources, and useless to society, who have been enabled to bear with impunity twelve bottles of wine a day; excess with them commenced beyond the twelfth. What manual labour could procure necessaries to such a habit as this? How happy would be that condition of society, in which every one could procure what is sufficient, and learn to be contented with that!

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

We have considered the diseases of the membranes covering the air tubes,—the bronchial membrane, and the pleura,—and we now come to the affections which attack the texture of the lung itself. These cases not unfrequently occur as a result of bronchitis, the inflammation extending itself from the membrane to the deeper-seated tissues of the organ. The expectoration becomes more viscid than usual, and sometimes it is actually of a plastic character; this is found in deep-seated inflammation of the small, as well as of the larger tubes. It is also a very common thing for inflammation of the pleura to extend to the texture underneath; but inflammation not unfrequently occurs in the parenchymatous tissue as a primary disease, and, therefore, becomes a subject well worthy of our attention.

In considering inflammation of the parenchyma, we must refer to the character and nature of the texture which is the seat of this inflammation. Pneumonia, or inflammation affecting the parenchyma, is distinguished by various symptoms from inflammation of the membranes of the lung, and so long as we consider pneumonia to be a disease of the parenchymatous texture itself, we shall have no difficulty in understanding the subject; but when we come to a further division, we must define where one kind of inflammation ceases, and where the other begins; a point which is somewhat more difficult of explanation. If you refer

to anatomical knowledge, you find that the textures interposed between the lining of the tubes on one side, and the pleura on the other, are extremely slight. You have the filamentous, or the vesicular, interstitial texture, which unites the various vessels together; and, besides this, you have the muscular apparatus.

If you go further, the filamentous texture may be divided into several parts, into globes and into globules; and accompanying them are various vessels, also forming subdivisions within themselves. Of all this, by far the most important part, whether anatomically or pathologically considered, is the vascular net-work or plexus. It is this great pulmonary plexus which becomes affected in diseases of the paranchyma of the lung, and constitutes its gravest character, causing it to run to so extensive and often to so destructive a length, and thus producing not only local disease of the lung itself, but, through the medium of this organ, affecting the whole system. You must consider that pneumonia is not merely a disease of the parenchyma of the lung, but it is also attended by a morbid state of the blood, not only in relation to the chemical changes that take place, but likewise in regard to the actual composition of the blood itself, and this to a greater degree than in most inflammatory diseases. Without this we cannot fully understand the extraordinary forms which disease of the texture of the lung sometimes assumes, and more particularly that which I am now going to speak of—phthisis pulmonalis. This disease, although treated as an affection of the lung itself, is much more than a disease of this organ; it is, in fact, a disease of the whole system. I shall, before proceeding further, at once give a short description of the symptoms of inflammation of the lung. The usual symptoms are those invariably accompanying acute inflammation: high fever, with its concomitants, sometimes ushered in by shivering, pains in the chest, shortened breath, gradually becoming more difficult, expectoration of a peculiar character; and this increasing more and more, being at first clear, like the bronchitic expectoration, but soon becoming rusty, having a tinge of a brownish matter equally diffused through the sputa, and sometimes exhibiting a greenish or dusky yellowish colour. Sometimes it has great viscidity, so remarkable that, in many cases, the vessel in which it is placed, may be inverted without its falling out; or, if it does fall, it is in glutinous streaks. These are the general symptoms that occur at the commencement. In some cases a shivering fit announces the approach of pneumonia. This has been remarked by some French physicians as announcing the coming on of the disease, particularly in old persons. It is, however, a doubtful sign. The general symptoms are not always very marked, though, generally speaking, there is a greater amount of constitutional disturbance in the commencement of this inflammation, than in that of pleurisy. There is a greater amount of vascular disturbance, which often arises from the dyspnœa present, but there is not the same amount of oppression as in severe bronchitis. The disease is also more gradual in its coming on. The lividity of the countenance is far from being so great in pneumonia as in bronchitis; the reason of this being, that inflammation of the parenchyma interferes less with the proper changes of the blood; whereas, in bronchitis, when the effusion takes place in the bronchial tubes, it very soon extends to their smaller ramifications. Though the disease of the parenchyma does spread, it does so more gradually; the infringement on the respiratory function is not so sudden; hence the lividity and oppression do not occur in so marked a degree. There is pain in the chest in some cases, but of a very uncertain character. The pain is dull and deep seated. This is perhaps the more usual form; and it is referred to the sternum, or to the side, (not so low as the stitch of pleurisy) and is often felt at the shoulder blade of the affected side. It is generally increased by full inspiration, but not with the catch, as in the case of pleurisy. The decubitus in this disease, is a matter really not of so much practical importance as is generally supposed. There are so many exceptions to the rule, that it ceases to be a rule at all. The decubitus is more generally on the back, and sometimes on the affected side. The pulse is, in the first instance, generally hard; there is at first a considerable hardness and fullness, but it soon loses this character. It is apt to become more soft, though it does not lose the character of hardness so soon, in most instances, as it does in bronchitis. In bronchitis there is a change from the sthenic to the asthenic state; the state of excitement more quickly merges into that of depression, than it does in pneumonia. On the other hand, the pulse becomes softer and weaker in pneumonia, than it does in simple pleurisy. This is the general rule, but there are many exceptions to it. Heat of the skin is remarkable. In most cases, pneumenia is of the sthenic kind—the active inflammatory kind; and the heat of skin rises very high. You find cases of partial pneumonia without the heat of skin being so permanent. With these general symptoms in reference to the lungs, there are often others referred to disorder in the system, more so perhaps than in pleurisy, and more so, generally, than in bronchitis. It is very often accompanied by gastric, hepatic, and sometimes cerebral disturbance. Sickness and vomiting frequently occur at the commencement of pneumonia. Slight jaundice is not an uncommon symptom, particularly when the right side is affected. Sometimes there is great cerebral disturbance, accompanied with delirium, particularly in the low or asthenic form of pneumonia; and sometimes, when this occurs, it is very apt to disguise the true nature of the case. The pains in the chest and difficult breathing, under these circumstances, are very little complained of, and the cough may not be very troublesome. Although the expectoration will point out to us the true character of the disease, the surest guide in the diagnosis is formed by the physical signs.

Before you can understand the character and physical cause of this disease, it is important to consider the changes that are produced in the substance of the lung—the true pathology of the disease. This has been divided into three stages; first, the stage of congestion. Now, this stage is one in which the vessels are distended; the effusion is beginning to take place, but has not entirely obliterated the vesicular texture of the lung. The lungs, in this state, are of a deeper colour than usual, and partake of the colour of the blood, which they now contain in large quantities. The distended texture is heavier than in the natural state; not so much so, however, as to sink in water: and, on examination of the lung, you will see the reason of this; inasmuch as there is a good deal of air in the texture, and on pressure you will find the greater portion soft, yielding like an œdematous limb; the lung crepitates under the finger, showing that there is air and liquid in the congested tissue. On further examination of the lung, in this first stage of pneumonia, we find other characters that show the effect of early inflammation. It is more fragile than usual, and the finger easily breaks down the substance of the lung, and to make the matter more certain, it may be decided by the act of tearing it, which shows that the fragility does not arise from mere distension of the muscular texture, but that, in addition to the distension, there is a sudden loss of cohesion. On cutting the lung, there often exudes an abundant stream of serum, sometimes reddish, and at other times quite colourless. On cutting across the lung, you sometimes find, where the serum is exuded in large quantities, that the blood is coagulated in the larger vessels. This, however, is not always the case.

Now, in the first stage of pneumonia, the signs are, in the first place, a certain degree of dullness on percussion, and a diminution in the respiratory murmur. This may occur very early in the disease. I am more and more convinced, by experience, that the strokes on the chest are among the most delicate modes of investigating the state of the lungs. The dull sound is the very first sign of this stage of congestion. In bronchitis, where the respiration has been greatly interrupted, the lung becomes congested. The most common parts where this takes place, are the posterior and inferior portions,—they are, also, the more common seats of pneumonia; although it is pretty common, too, in the upper regions. Dr. Stokes says that the respiration is puerile before the inflammation comes on; Dr. Walker, and others, consider it to be puerile in the adjoining parts; but it appears to me to be only a little modified; a little shorter, where the texture is somewhat compressed. The next sign is the crepitation, which begins at first in a very slight manner—there is a little crackling heard—and by-and-by it occupies the whole of the respiratory act. First of all, it exists chiefly at the first part of the inspiration, and then increases and occupies the whole of the respiratory act, as the disease goes on. Although this is an excellent sign where it is present, there are a number of conditions in which it does not appear so manifest; but where the dry, equal crepitation is present, in pneumonia, it is a very valuable sign. Its character is equal throughout; and there is in this crepitation a freedom from the bubbling or whistling sounds, which distinguishes it from the mucous rhonchus. As this crepitation increases, the respiratory murmur diminishes, until it is completely superseded by it; and as the congestion increases, the sound of the air passing into the lungs may become altogether abolished. It, however, often remains present to a certain degree, and may be produced by forcible acts of inspiration. In the lower part of the chest, there is no respiratory sound, but, on desiring the patient to draw in a full breath, the crepitation is heard. The sound on percussion becomes more and more dull, and as the disease increases, the respiration of the healthy part of the same lung, and frequently that of the opposite lung, becomes puerile; in cases of females particularly, this puerile respiration is uncommonly developed. The puerile respiration of the opposite side is generally in proportion to the extent of disease in the affected side. Then, there is the sound of respiration towards the root of the lung, and towards the central portions. As the disease extends, it rises up so high as to cause dulness in the middle regions of the chest, and, even before the crepitation is gone, you begin to have the bronchial respiration. This phenomenon is mostly exhibited when the pneumonia occupies the upper lobes; it is very common when the disease is seated in the posterior part of the upper lobe; for this reason—that the bronchi there are larger, and the air passes in with more force than in the lower parts of the chest; the bronchial respiration, accordingly, is only heard in the early stages. Bronchophony is sometimes heard for the same reason. In the second stage—the stage of hepatization, as it is called—the transition is perfectly gradual. For, these stages are nothing more than different degrees of the inflammatory process, and the modifications between the one and the other, are consequently anything but marked. You find the lung becomes more and more dense, and heavier to the touch, and that it likewise contains more liquid substances within it; you find that there is not only blood in it, but a purulent kind of matter, which gradually increases as the quantity of blood diminishes, until at last the whole lung is converted into a soft, semi-solid mass. Now, this state of hepatization presents two appearances, which are nothing more than different degrees of the same thing. The hepatization consists in an effusion of lymph, and, as in inflammation, the vessels, first of all, become highly distended, so much so, that the air is pushed out of the lung. We have then, here, besides a distended state of the vessels, an effusion of serum in consequence of the inflammation, which converts the texture of the lung into a more or less solid mass, and thus interferes with the circulation of the blood through the vessels. The consequence of this hepatization is, that the lung becomes gradually of a paler colour. It is first distinctly red, and this is called the red hepatization; the colour then becomes paler and paler, and this constitutes the grey hepatization, or pale hepatization, as it is more properly called. At this period, other distinctions become evident. An effusion of lymph obviously takes place in the texture of the lung, and here we have an opportunity of making an examination into the central seat of pneumonia. In some cases, you find, on cutting the surface of the lung, that it has not an uniform appearance, but seems to be mottled by a number of very fine grains,

about the size of a pin's head, and which are paler than the surrounding texture. These are obviously globules of lymph which have become deposited in the tissue of the lung, constituting what is called the granular form of hepatization. This is the most perfect form of this alteration. Hepatization is an uniform redness and consolidation of the lung, this redness gradually passing into a lighter shade. The uniform kind of hepatization occurs in many cases, and I believe it to be a distinct form of pneumonia; others have called it the *non*-granular, or the inter-vesicular form of pneumonia. There is another character of hepatization I have adverted to, and that is, the increased substance and density of the body of the lung, which, though in a state of congestion, still contains some air-bubbles, and that which did not previously sink in water, is now so solid that it does actually fall to the bottom. There is not only a filling up of the air-cells, but there is a certain amount of swelling of the whole lung. It is a rare occurrence to find the volume of the hepatized lung the same as that of the natural lung. You sometimes find the lung, in this state, pressing out the ribs, and forming a protuberance in the intercostal spaces. This is generally the result of the granular form of hepatization. Well, now, what does this arise from? The granular form of pneumonia probably arises from the deposition of lymph in an individual cell, or in some of the cells only. If it were universal, it would be uniform, and could scarcely be called granular; but it is a deposition in some parts more than in others. With regard to the sign of this condition; the matter being deposited in this way, and the lung being greatly consolidated, the texture, of course, gives a dull sound on percussion, and this dulness becomes increased in proportion to the advancement of the disease. But still you rarely find the dulness so perfect and so remarkable, as it is in liquid effusion, for this reason — it is rarely that every portion of the lung is consolidated. There is another reason;—you find that a highly compact lung will transfer the sounds from the distant parts better than liquid; accordingly, when the left lung is consolidated, the sound heard over the region of the stomach is not so very dull, but it is tympanitic, and transmits, in some degree, the tympanitic sound of the stomach. Now, look, on the other hand, at the condition of things in liquid effusion. The liquid effusion is not only in contact with the walls of the chest, but, if it is extensive, there is a depression of the diaphragm on the stomach, and there, consequently, is not the same amount of tympanitic sound over the lower parts of the chest.

I shall continue this subject to-morrow.

ON THE DETECTION OF ARSENIC IN MEDICO-LEGAL RESEARCHES BY REINSCH'S TEST.

By ROBERT CHRISTISON, M.D., Professor of Materia Medica in the University of Edinburgh.

It is now generally known in this country, that towards the close of last year, Professor Reinsch proposed an entirely new method of detecting arsenic; which consists in acidulating any suspected fluid with hydrochloric acid, heating in it a thin plate of bright copper, upon which the arsenic is deposited in the form of a thin metallic crust, and then separating the arsenic from the copper in the state of oxide, by subjecting the copper to a low red heat in a glass tube. Organic fluids and solids, suspected to contain arsenic, may be prepared for this process by boiling them for half-an-hour with a little hydrochloric acid,—solid matters being cut into small shreds, water being added in sufficient quantity to let the ebullition go on quietly, and care being taken to continue the boiling until the solids are either dissolved, as generally happens, or are reduced to a state of minute division.

Nothing can be more simple, easy, or precise, than the method of Reinsh. It is also exceedingly delicate,—more so than is ever likely to be necessary in any medico-legal investigation; for it is adequate to detect a 250,000th part of arsenic in a fluid. It is also perfect in another respect. It does not leave any arsenic in the subject of analysis; none, at least, which can be detected by any other means, even by the most delicate process yet proposed, that of Mr. Marsh.

My object in briefly calling the attention of professional persons to the subject at present, is to mention the results of its application to two medico-legal cases in which I have lately employed it, and to state one or two circumstances which ought to be kept in view, in order to give it its full value, as the means of furnishing irrefragable evidence in criminal enquiries.

Reinsch's test, as it is often called, is not to be regarded as in strict language a test, adequate to prove the existence of arsenic. Chemistry requires no new test for determining the nature of arsenic, when once it has been detached by itself for examination. It is truethat the separation of arsenic upon copper, from a state of solution, by means of hydrochloric acid and heat, is a new fact in chemistry. And the experiment furnishes a test so far, that, if the copper be not tarnished, arsenic cannot be present. But though Reinsch's discovery thus supplies a prompt and certain negative test, it cannot be regarded as a positive one, when the copper does acquire a metallic coating; because, as he himself has pointed out, bismuth, tin, zinc, and above all antimony, will in the same circumstances yield a coating to copper, different indeed in some degree from that formed by arsenic, yet sufficiently similar to render it absolutely necessary that the deposit be examined otherwise than by ocular inspection only. Reinsch's process, however, is of far greater value than if it had merely presented chemical science with a new test for arsenic. It constitutes the simplest, easiest, and most secure mode of separating arsenic from the most complex states of mixture in such a condition, as to enable the experimentalist to apply to the metal with great facility any of the characteristic tests already known.

The question then is, having thus an admirable method of obtaining the arsenic for examination, what are the most advisable properties to employ for testing it? What tests furnish in the circumstances the best evidence? For this is the point to which all chemical inquiries in medical jurisprudence ought to tend.

In my opinion, no method of testing approaches the following in facility, delicacy, or conclusiveness. Cut the copper, on which the arsenic is deposited, into small chips, so that they may be easily packed in the bottom of a small glass tube; and apply a low red heat. A white crystalline powder sublimes; and if this be examined in the sunshine, or with a candle near it, a magnifier of four or five powers will enable the observer to distinguish the equilateral triangles composing the facets of the octaedral crystals, which are formed by arsenious acid when it sublimes. Sometimes the three equal angles, composing a corner of of the octaedre, may be seen by turning the glass in various directions. If triangular facets cannot be distinguished, owing to the minuteness of the crystals, then shake out the copper chips, close the open end of the tube with the finger, and heat the sublimed powder over a very minute spirit-lamp flame, chasing it up and down the tube till crystals of adequate size are formed. Next, boil a little distilled water in the tube over the part where the crystalline powder is collected; and when the solution is cold, divide it into three parts, to be tested with ammoniacal nitrate of silver, ammoniacal sulphate of copper, and sulphuretted hydrogen either in the state of gas, or dissolved in water.

Here I cannot help expressing my surprise, that both in the inquiries carried on in various quarters respecting Reinsch's process, and in the multitudinous researches that have been made on the subject of Marsh's method, during the last four or five years, by Professor Orfila, M. Lassaigne, MM. Danger and Flandin, M. Malapert, M. Coulier, M. Dupasquier, and M. Chevallier in France,—by Professor Liebig, Moor, Pfaff, and Petenkofer in Germany,—by Mr. L Thomson, Mr. H. H. Watson, and Mr. Marsh himself in Britain,—and by other experimentalists who might also be mentioned,—no one to my knowledge has bethought him of applying, as a test of the nature of an arsenical crust, the conclusive process described above, and first suggested to me in 1826, by the late Mr. Turner, which consists in converting the metal into the oxide, in such a way as to allow the form of its crystals to be determined. The method, I have reason to know has been in constant use in medico-legal researches in Scotland; but I have not heard of its being currently employed elsewhere. Yet, what other method is so satisfactory? What other metalliform substance but arsenic yields, by heat and oxidation, a white sublimate with triangular facets? Or, suppose this single character be thought not enough to characterise the substance under examination, what other character of the arsenical crust leaves the substance in such a state as to be so easily subjected to so many excellent supplemental tests?

In employing Reinsch's process with the system of tests superadded, as now explained, the following particulars have incidentally occurred to me as worthy of notice:—

In boiling organic substances in the weak hydrochloric acid, care must be taken to ascertain that there is a decided excess of acid always present. Two fluidrachms to every eight ounces of liquid are in general sufficient; but if the organic matter be an animal texture in a state of decay, a much larger quantity of acid may be necessary, owing to the presence of ammonia, which tends gradually to neutralise the acid as the solution goes on.—Reinsch does not advise filtration of the fluid after the acid has acted sufficiently on the subject of analysis. But notwithstanding the delay occasioned by filtration, this seems to me advisable in most instances, otherwise organic particles are apt to attach themselves to the copper, and thus give rise to empyreuma when the metallic arsenic is driven off by heat.——The most convenient form for using the copper is that of copper-leaf; but ordinary plates of copper may easily be made of any degree of fineness by immersing them for a time in diluted nitric acid.—Where the quantity of arsenic in the fluid is supposed to be small, nearly half an hour should be allowed to elapse before the copper is removed.—Before applying the sulphuretted-hydrogen as a test to the solution of the sublimed oxide, the solution must be acidulated with hydrochloric or acetic acid.—In every case the whole process should be applied in the first instance to distilled water, acidulated with the hydrochloric acid to be employed afterwards; and if the copper be tarnished, a purer acid must be obtained, or the copper must be subjected to the subsequent steps of the process in order to ascertain whether the tarnishing be occasioned by arsenic or not.

I have employed the preceding method in two medico-legal cases. In one,—where the body had been buried for four months, and where the arsenic had been detected in the

contents of the stomach by Marsh's method, and in a portion of the liver in the same way, preceded by Orfila's process for the destruction of animal matter,—I succeeded very easily in obtaining from about a sixth part of the stomach, after it was thoroughly washed, repeated steel-coloured crusts upon copper, which, when heated in a tube, gave out white crystals with triangular facets; and the solution of these crystals gave characteristic indications with the three liquid reagents, ammoniacal nitrate of silver, ammoniacal sulphate of copper, and sulphuretted hydrogen water. In the other case, also four months after interment, the contents of the stomach, boiled with muriatic acid and filtered, were not visibly altered by a stream of sulphuretted hydrogen gas which was applied to a drachm of the fluid. Nevertheless Reinsch's method yielded precisely the same results as in the former instance. A portion of the liver, amounting to a sixth of the whole organ, which had been sent from the country along with other materials for analysis, was then subjected to the same process. Arsenic was also indicated, but in very minute quantity. I was satisfied with the application of one liquid reagent to the solution of the sublimate, namely, the ammoniacal nitrate of silver; but there was solution enough for all three. By the same method as that applied to the liver, I obtained arsenic in larger quantity from one-half of the stomach.

The experience I have had of this method of analysis in medico-legal researches, brief though it be, is yet sufficient to convince me, that it must soon supersede the beautiful but much more elaborate method of Mr. Marsh. It may be applied even to the tissues of the stomach, and including the process of filtration, in the short space of two hours.—*London and Edinburgh Journal.*

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 31st Aug., 1843.

Professor Dubreuil has just published two cases of fibrous tumours, situated in the left auricle, and extending into the left ventricle, which are interesting in a pathological point of view. In the first, the summit of the tumour was attached to the auricle, its basis perfectly free, projected into the ventricle, its length was about 1.850 inch, its breadth from 1.223 to 2.913 inch. It formed a mass evidently of a fibrous or albuginous nature, and was covered by the endocardium considerably thickened. The mitral valve was hypertrophied. The aorta, at its origin, offered several concretions between the middle and internal membranes. In the second case, the auricle contained a fibrous tumour, about $1\frac{3}{4}$ inch long, with a circumference of from 1 to $3\frac{1}{2}$ inches. It penetrated into the ventricle, and pressed on the right half of the mitral valve.

Professor Roux drew the attention of his pupils to two cases of urinary calculi, one an old man, aged 68, the other in a child aged 4 years and 3 months, both lithotomised on the same day. The operation does not present the same difficulties at these different ages. In children they depend, first, on the impossibility of keeping them motionless; second, on the narrow space allotted to the operation causing the rectum sometimes to be opened, or an artery divided. On the other hand, the calculi being smaller, the instrument necessary for their extraction is also necessarily smaller, and the parts are less liable to be irritated by their presence. In adults and old persons, other difficulties present themselves; first, the bladder is deeper seated, often irritated or lazy; second, the calculi are larger, often encysted. On the whole, lithotomy may be considered less dangerous to children than to adults. The accidents also vary after the operation, and are far more frequent in adults than in children; probably because in the former, moral pain is added to physical, whereas in the latter, physical pain alone is experienced, rendering the operation less to be feared as to its result. The accidents are principally consecutive hæmorrhage, or inflammation; especially the latter: indeed, were it possible to prevent its development, few patients would die. In some cases it is very limited, in others very extended; and then the parts are so swollen that the wound of the skin is completely closed, and the urine infiltrates itself into the sub-cutaneous cellular tissue. —The best method is the lateral operation, which offers little difficulty to a person accustomed to perform it. The integuments must first be divided obliquely on the left side of the raphe, and then the bladder, and not both at the same time, as recommended by Guerin of Bourdeaux, taking care not to wound the rectum, nor to divide the arteries of this region. As to the choice of the instrument with which the bladder ought to be divided, the gorget is preferable to the lithotome caché, because a skilful operator is, with the former, far more certain of the extent of the incision. The following case is a proof of this fact. A young man was operated upon for the stone, and every thing seemed to promise a speedy recovery, when all at once the urine ceased to flow through the wound, the patient was seized with shiverings and pain in the perinæum, and died. The *post-mortem* examination shewed that the lithotome caché had divided the bladder much further than had been supposed or intended, and that there was an infiltration of urine in the cellular tissue. In children it frequently happens that procidentia ani takes place. Should this occur, the intestines ought not to be reduced until the operation is completed, because the parts thus protruded, stretch those which remain in the interior, and by diminishing their capacity, render them less liable of being cut. This accident, however, is easily avoided; it happened only once to Professor Roux, in 400 to 500 cases. After the operation, the urine flows through the wound; it is only occasionally that it passes through the urethra; the parts must, therefore, on this account be frequently dressed, in order to prevent the irritation produced by that liquid.—In reference to the two cases, though both patients ultimately recovered, the progress of the cure was much slower in the old man than in the child, owing to the state of the bladder; which, from long disease, had lost a great portion of its contractility, necessitating the frequent use of the sound.

MM. Bouchardat and Sandras presented to the Academy of Sciences the result of the researches made on digestion, and the assimilation of fatty substances, with some reflections on the use of the bile, and on the chyliferous system. The conclusions were,—that oil, hog's-lard, and suet, are readily absorbed by the chyliferous vessels; wax with greater difficulty when alone, but much sooner if mixed with two or four parts of oil,—that the action of bile during digestion appears to be simply to facilitate the absorption of fatty substances, and even then it seems purely mechanical, for we find none of the principal constituent parts in the chyle—that its principal use is to remove from the economy the cholestrine, the surplus of the fatty substances, and the hydrogenated and resinous matter; its secondary action is to form an emulsion with the fatty substances,—that the quantity of fat contained in the blood is very trifling, and is always the same, though the food may be of different kinds,—that the blood of an animal, fed exclusively on oil and fat, is more fluid,—that stearic acid can be recognized in the blood of animals fed with suet, and is there converted into margaric acid,—that the fat of the blood of carnivorous animals contains one or more volatile acids,—that, besides these acids, there exists constantly in the blood a fatty substance, called cholesterine,—that the liver is the organ which eliminates the cholesterine,—that, in all animals thus fed, a beautiful fatty injection of the chyliferous vessels is to be observed, in immense quantities, in the small intestines, a few in the duodenum, and still fewer in the rectum.

Professor Rostan presented the following remarks on icterus. The fœces are not so generally discoloured as is supposed; the pulse is extraordinarily slow, offering only 60, 40, and even fewer pulsations in a minute: can this be attributed to the action of any of the constituent parts of the bile, producing an effect similar to that of digitalis? The causes are hepatitis, especially of the concave surface; encephaloid tumours; abscesses in the liver; rupture of the vesicle; obliteration or diminution of the capacity of the biliary ducts (by a neighbouring tumor, by inflammation, or by calculi); inflammation and thickening of the mucous membrane of the duodenum, as in cases produced by irritating poisons. Icterus spasmodicus, caused by spasmodic diseases, or passions of the mind, may, by frequent repetition, produce a chronic inflammation of the liver, and thus prolong the disease. As to the icterus which takes place during pregnancy (*icterus gravidarum*) some authors attribute it to the pressure exercised by the gravid uterus; while others say it is owing to a spasm of the abdominal viscera, as it often disappears before delivery. The treatment must be modified according to the causes. If icterus is produced by inflammation of the liver or duodenum, the antiphlogistic regimen must be strictly adhered to; if it be from hypertrophy, or obstruction of the liver, gentle purgatives are very advantageous; to conclude, when the disorder becomes quite chronic, moderate doses of the saline purgatives ought to be administered, combined with mercurial frictions on the abdomen, and especially on the right hypochondrium, or with blistering.

M. Lieutaud, surgeon in the navy, in a letter to the Minister of War, gives a description of the different kinds of opium made in Bengal. The three principal are,—1. The *China opium* in spherical loaves weighing about 4,411 lbs. is of a brown colour and aromatic smell *sui generis*, is wrapped up in the petals of the poppy, and comes from upper Bengal and certain districts of the presidency of Agra.—2. *Abkaru opium*, sold in the bazaars of Calcutta by authorised dealers, in spherical loaves, weighing 1,206 lbs. of a darker brown colour, and of an aromatic smell, is wrapped in a species of coarse silk, and comes from the factory in Upper Bengal.—3. *Medicinal opium* in square loaves, weighing from 1,206 to 2,411 lbs, is more consistent, brittle, of a dark brown, nearly black colour, of a more powerful aromatic smell, is preserved in plates of talc, surrounded by a layer of wax 1,066 inch thick, and is made principally in the factory of Patna from the juice collected in the Patna opium garden. From recent analysis, this last is found to contain $10\frac{1}{2}$ per cent. of morphia, whilst the others only give 2·1, and sometimes half per cent., though they are all collected from the same species of poppy, the *papaver somniferum*. The quantity, as well as the quality, differs, not only according to the district, but even in the same; for instance, a surface of 1,452,666 square feet in the district of Patna, produces annually, on an average, a quantity worth 6 rupees, whilst the same extent of ground in the Patna opium garden gives per annum a quantity worth twelve to fifteen rupees. In order to collect the opium four diagonal incisions are made in each capsule, in the middle of the day, to allow the juice which exudes to harden before night. The juice of a white, opaque, milky appearance and very acrid, by degrees thickens and becomes darker, and 24 hours after is resinous, offering all the characteristic signs of opium. Each capsule gives about ℨj. The opium thus collected is divided into 4 classes, according to its degree of consistency and solubility in distilled water; that of the 1st class contains from 35 to 45 per cent. of opium; and that of the 2d from twenty-seven to thirty-five per cent. Every year a certain quantity of the 1st class is set apart either for medical use, or for presents that the company generally make to several native potentates or priests of the pagodas. When sold, before they retail it, the Chinese subject it to a preparation in order to render it fitter for the deadly use to which it is intended. It will not be uninteresting to compare the result of the experiment made by the French Government in Africa, consigned in a letter from Mr. Hardy, director of the Royal Nursery at Algiers, to the same minister. About 11,760

square yards were sown with poppy seeds, and from 990 capsules about 1,764 oz. of opium were collected. The expenses for tillage, incisions, &c. amounted to 10 francs; whereas the profit, supposing the opium to be sold as 1st quality at 32 francs the 2,206 lbs. will not cover the expenses. Perhaps if cultivated on a larger scale such an end may be attained. The sample of opium was forwarded in order that it might be analysed.

Another champion has entered the lists against M. Gannal; viz., Dr. Biechy, who says that at Strasburgh the injection of a solution of alumine by the carotid, has always been made use of to prevent the decomposition of bodies destined for anatomical preparations. M. Gannal, however, declares, in a letter addressed to the editor of the *Gazette des Hopitaux*, in reply to one inserted in that periodical from M. Marshal de Calvi, that he is determined to prosecute any person who injects a corpse by the carotid, even if they employ another liquid than his, i.e., the solution of the acetate of alumine. The Gazette makes the following judicious remarks on this subject,—As this question can only be decided by law, should the adversary or adversaries of M. Gannal consider themselves sufficiently strong in their right to affront his anger, the only way would be to embalm a body, gratis, by injecting into the carotid a different liquid to that employed by M. Gannal, and then await his attack.

M. Jules Guerin has addressed a letter to the *Conseil d'Administration des Hopitaux*, requesting the nomination of a commission to examine into the truth of the statistical table published by his desire, to follow up as long as is necessary, the different treatments employed in his wards, to note their efficacy, so as to be able to give an account of the results obtained, and to decide if he does not deserve satisfaction for the calumnies to which he has of late been subjected. The commission named is composed of Professor Orfila, president, members Messrs. Blandin, Breschet, Jobert (surgeons) and Louis, Rayer, and Serres, physicians.

The Society of Medical Sciences of the Moselle, proposes the following question, "Search in the annals of medicine if the theory, known under the name of hydrotherapia, was modern, as its adepts pretend, and if, in all ages, rational medicine did not reap benefit from its use." The prize will be a gold medal. Memoirs addressed (p. p.) to the secretary of the society before the 1st Nov. 1843.

Dr. Delstanche, director of the Otological Dispensary, Brussels, will give a gold medal worth £10 for the best memoir on the following subject. "Describe the diagnostic of nervous deafness, and the best means to be employed in order to attain a cure." Memoirs written in French or Latin to be sent (p. p.) to Dr. D. No. 2, Rue de Berlaimont Brussels, before the 1st Sept. 1844.

Dr. Chervin died on the 18th inst. at Bourbonne les Bains, where he had gone in the hopes of obtaining relief for a chronic disease of the heart. His will, sent by Dr. Ballard to Dr. Londe, M. A. M. expresses a wish that France would repay those, whose generosity enabled him, after he had spent, not only all he had gained, but also his patrimony, to continue his studies on the origin and propagation of the yellow fever, in order to modify the sanitary laws adopted against this disorder in Europe. His scientific career may be said to have begun in 1814, when he left for the New World: visited 600 leagues of the American coast, the English, French, Dutch, Danish, Swedish and Spanish colonies, studying the disease in the several places, and returned to Europe in 1822. In 1828 he went with Messrs. Trousseau and Louis to Gibraltar where the yellow fever was then raging; their joint account appeared in 1830. In 1832 he was elected Member of the Academy of Medecine. —[For further particulars, vide *Medical Times*, vol. 8, No. 206.]—Dr. La Corbiere proposes, should no other means be employed, raising a subscription to fulfil the last wishes of Chervin, and to erect a monument to his memory.

Academy of Sciences,—Sitting of the 28th August.—Professor Velpeau presented to the Academy in the name of Dr. Fabre, editor of the *Gazette des Hopitaux*, and Laureat of the Academy, the 1st volume of a work he is now publishing under the title of *Bibliotheque du Medecin praticien.* This important work, continued M. Velpeau, will be composed of about 12 volumes, is a complete monography of the diseases of the female genital organs, and completely attains the end proposed by the author, viz. of comprising in as small a compass as possible, all that has been published both by ancient and modern authors on this subject, and forming, as it were, an encyclopœdia of practical medicine, rendering it on this account especially useful to the general practitioner.—M. Jobert de Lamballe addressed a memoir *on a new autoplastic method for the cure of ranula.* The tumours described under this denomination differ essentially from each other: in some, the dilatation and obliteration of the Warthonian canal has nothing to do with the disease, whilst in others it forms the whole disorder. The word *ranula* ought to be employed only for tumours formed by the saliva. The different methods hitherto proposed, are,—incision, cauterisation, excision, extirpation, and injection, and each author vaunts his method as preferable to all others. But, considering that ranula is of very different natures—in some cases a method would succeed which would be unsuccessful in another. Thus a small mucous cyst may be cured by a simple incision—when larger, it needs extirpation, cauterisation, or the seton; but all these fail when it is produced by obliteration and dilatation of the Warthonian canal; in such, the following operation is the most efficacious; it consists—1. In cutting off a portion of the buccal mucous membrane—2. In opening the tumour—and 3. In throwing back the edges of the division of the swelling, and in fixing them to the borders of the incision of the mucous membrane. By this operation a sort of infundibulum is formed, in the bottom of which the opening of the salivary duct is to be perceived. At first the saliva flows abundantly, but gradually it decreases in quantity, and soon is reduced to the normal state. Consecutive inflammation is trifling. Finally, should the tumour be very large, an elliptical portion must be removed instead of making a simple incision.

Academy of Medicine—Sitting of the 29th Aug.—MM. Pariset and Royer Collard read the speeches delivered by them at the inauguration of the statue of Bichat, at Bourg; both received the merited applauses of the assembly.—M. Bousquet read a memoir on the best means of renewing the vaccine matter. "Of the four methods proposed," said the honorable academician, "I shall only speak of the following:—Whether a cow vaccinated renders the vaccine more active. Struck with the little success attending several experiments lately attempted, and reasoning from analogy, I resolved to operate only on young cows, or heifers, and I obtained complete success. The pustules began to shew themselves on the 5th day; attained their maximum of intensity of the 7th, and on the 8th began to decline. Children vaccinated with this matter offer nothing extraordinary. Thus I am led to conclude that the vaccination of the cow does not render the matter more active; still I think that it would be advantageous to perform this operation from time to time. An animated discussion took place after the reading of this memoir, in which MM. Rochoux, Emery, Moreau, Dupuy, Gaulthier de Claubry, and other members were heard.—M. Bouvier presented a lad in order to shew that in deviations of the spine there is not retraction, but merely contraction of the muscles. The distance between two given points of the spine, when the patient was standing, was 6,299 inches, and when he bent forwards it was gradually increased to 8,661 inches, and even 9,055 inches, evidently shewing that the muscles were susceptible of elongation, which would not take place if they were retracted.—M. Ratier then presented a new instrument to divide the strictures of the urethra.

Garland de Beaumont, D.M.P., B.L. & S.

Honorary Physician to the Spanish Embassy.

PERISCOPE OF THE WEEK.

(Archives de la Medecine Belge; Medicinisches Correspondenz-blatt; London and Edinburgh Medical Journal; Edinburgh Medical and Surgical Journal; Bengal Transactions; Lancet.)

Case of Neuralgia.—Dr. Victor Uytterhoeven, President of the Medical Commission at Brussels, relates several cases of neuralgia, affecting different parts of the body, and arising from various causes, which he cured, by making numerous punctures with a lancet, charged with a saturated solution of the acetate of morphia in the course of the affected nerve or nerves. A sensation of heat and slight redness generally followed the punctures, but was soon removed, the pain also rapidly diminishing, and ultimately disappearing, without relapse. The cases narrated by Dr. Uytterhoeven are fifteen in number.

Employment of Caustics in Nasal Polypus, Squirrhus, &c.—A German quack employs a caustic compound of equal parts of sulphuric acid, and butter of antimony, with a small quantity of pulverized nitrate of silver, as a caustic in the treatment of squirrhus, cutaneous tumours, polypi, &c. He pinches the tumour between his fingers, and marks its base, which he encircles with a thin layer of the caustic. Half an hour afterwards he repeats the process, and continues it from half hour to half hour, until the tumour can be removed without hæmorrhage. Twenty-four hours sometimes pass away thus, during which time he is continuously at work, both night and day, drinking freely of brandy, but not allowing his patient to take anything. The succeeding inflammation is combatted by poultices, and cicatrization is promoted by dressings with the Peruvian balsam, and the *eau celeste*, (*Blauwasser.*) Nasal polypi are treated by him with the same caustic, which is applied by means of a long probe with a large head, all over the surface of the tumour, and to its base, the application being repeated daily, until the polypus comes away in shreds. In the interim, injections of the eau celeste are practised, which are employed to effect cicatrization. The root of the polypus is destroyed by the nitrate of silver. In cases of ulcerated cancer, the caustic is composed of equal parts of butter of antimony, sulphuric acid, and nitrate of silver, and is laid in a thick layer on the ulcerated surface, and continued till all traces of the disease are extirpated. Dr. Wagner, of Schlieben, in Saxony, has employed this preparation in cancerous affections of the nose, lips, and face successfully.

Calculus Passed by the Rectum.—A merchant, 50 years of age, of a strong constitution, and bilious temperament, placed himself under the care of Dr. Von Jan for gastro-catarrhal fever, of which he was relieved, there remaining some disturbance of the digestive functions, with flatulence, cold feet, tongue covered with a yellow fur, &c. For the relief of these symptoms, warm aperients and carminatives were prescribed with advantage, when one day, while the patient was at stool, he had painful tenesmus, and felt all of a sudden a hard body place itself across the rectum, which, not being able to pass, he hooked out with his finger, and found to be a stone about the size of a pigeon's egg, but rather longer, and about two drachms weight. It was smooth, of a whitish-yellow colour, with several deep brown lines on it; it broke readily under the knife; it consisted of a globular nucleus of a brown colour, about a line and a half in diameter, upon which were placed concentric layers of a yellowish-white colour, in filamentous crystals, and a brownish coating as thick as the back of a knife. Its odour was very penetrating, like that of old urine. After its

expulsion, the patient became jaundiced. Dr. Von Jan is inclined to believe, that this was an instance of intestinal calculus.

INJURY OF THE SKULL, FOLLOWED BY THICKENING OF THE BONE AND MEMBRANE, WITH EFFUSION OF PUS.—A young man, 22 years of age, was admitted into the Glasgow Royal Infirmary, complaining of severe headache, increased on assuming the erect posture, and then accompanied by vertigo and dimness of vision, with which symptoms he had been troubled, more or less, for the previous seven years, about which time he received a stroke, and a punctured wound, by a piece of wire, on the head, over the left parietal protuberance. When admitted, there were two small openings in the site of the wound, and the integuments around were undermined, but no bare bone could be felt; the pupils were large and sluggish; pulse 100; no impairment of the mental faculties, nor paralysis. Six days afterwards, he became suddenly insensible, and affected with stertorous breathing: he expired shortly afterwards. On removing the skull-cap, at the post mortem examination, above three ounces of thick greenish coloured pus escaped, and 2oz. more were found in a cavity formed between the skull-cap and dura mater. The left parietal bone was greatly increased in thickness, and its internal surface was rough and porous, and in its centre there was an oval cavity surrounded by a sharp irregular margin, projecting downwards on the brain: this cavity extended from the coronal to the lambdoidal, and from the sagittal to the squamous sutures, and measured three inches from above downwards, and four inches from before backwards. This large cavity communicated by a narrow opening with another of the same appearance, and formed in the same manner, but measuring only one by one and a half inch, and the margin of bone by which it was surrounded, did not project so much downwards. The dura mater was found to adhere very firmly to the projecting margins of the cavity, and after having been removed with difficulty, was found to be four times the usual thickness; its external surface, which corresponded with the cavity in the bone, was covered with masses of coagulable lymph, with loose free margins, resembling closely the appearance of the uterine surface of the placenta, when deprived of its colouring matter by maceration. The brain underneath the cavity was much flattened, but of apparently healthy structure; the ventricles contained some serum.

NEW STOMACH PUMP.—Dr. Henry Graham, of Edinburgh, has had a stomach-pump constructed, in which the place of the ball-valves is supplied by adapting to the instrument, a principle somewhat resembling that of Shaw's pocket bugle, or of Sykes' powder-flask. His object was to have a stomach,—or enema-pump, which would work well, and be free from all risk of the valves being clogged, or adherent. The æsophagus tube he wishes to be made rather wider in its calibre than those at present in use, which, he is convinced, can be done without inflicting any additional inconvenience on the patient. With Dr. Graham's instrument, when it is wished to change the action, from injecting the stomach to discharging its contents, or the contrary, all that is necessary is to reverse the movements of the thumb-piece, with reference to the action of the piston.

TARAXACUM IN CANCER.—Mr. Barrow, of Liverpool, says that he has seen, in a manner that scarcely permits him to doubt, the progress of cancer retarded, and even suspended for years, by the use of taraxacum. He recommends an extract prepared by Gifford, or a decoction of the fresh root. The extractum taraxaci, as usually made, is quite worthless. Dr. Kendrick, of Warrington, has informed Mr. Barrow that the roots taken in the early spring are inert, and that they should be collected in autumn. The zea mays has been recommended in America as a cure for cancer.

GALLIC ACID IN UTERINE HÆMORRHAGE.—Dr. Stevenson has published some cases of uterine hæmorrhage, treated with gallic acid, administered internally, apparently with advantage. The gallic acid was given in eight grain doses, every three hours, combined with powdered cinnamon, or sugar.

TO CORRESPONDENTS.

Several of our customary articles have been precluded admission by the length at which we have given the report of the CARLISLE INQUEST. *The remarks suggested to us by this interesting subject, are not so favourable to any of the parties concerned, as to induce us to more than briefly refer to them. Though an imputation shared by so many of our charitable institutions, we cannot the less condemn the negligence shewn in the medical routine management of the Cumberland Dispensary. The register and note books were of that deplorably defective kind which irresistibly suggests the notion of slovenliness of attendance, or a proper want of self-confidence, on the part of the medical officer. We will not stop to enquire whose the fault of the three gentlemen named, but cannot forbear saying that the duties imposed by the supporters of the charity, were neither respectably nor* fully *performed. The treatment of the unfortunate patient was certainly not of the happiest kind. If Dr. Barnes, from the beginning, knew that Clarke laboured under* morbus coxarius, *the treatment of him, both as an out and in-door patient, was fitful, inefficient, negligently thoughtless, and very injudicious. If he did not—the words, " et cætera," and " morbus coxarius," in the books, look strangely suspicious. On the wisdom of sending the man out hobbling on his two sticks, as cured—or even relieved —not a word need be said: the directors of the charity, and Providence, were both thanked for nothing, if the man's disease were—what even Dr. Barnes seems to have believed it—*morbus coxarius. *Of the course pursued by Mr. Elliot, our panegyric must be equally parsimonious. The very needless agony apparently caused in diagnosing the malady,—the use of a splint, as a palliative and solace to a dying man,—are neither of them matter for praise. We cannot compliment him, either, on his shewing as much taste and sagacity, as zeal and industry, in reference to this investigation. With Dr. Lonsdale, we think the medical profession might have been spared an* exposê, *which, if it proved Dr. Barnes and his friends ignorant or injudicious, exhibited Mr. Elliot and his supporters as rancorous or envious. Whatever the latter got in credit for cleverness and knowledge,—we know not how much that might be,—the former got in sympathy, as the objects of rivalry and persecution. The whole of this ill-judged business, indeed—if we are not unconsciousty writing in an ill-humour—deserves general condemnation. As it was every thing it should not be—so the Coroner was every thing he should not be. His impartiality was that of a partizan—his law, if we can rely on a legal friend, exactly what law is not—his competency, incompetency in plenitude. These are opinions which—if our self-complacency be not ill-founded—are too just and impartial to please any of the parties; but our place is to tell the truth—with others' delight, if possible—but at all events to tell the truth. Luckily for us, we are out of Mr. Coroner's jurisdiction, or (as he graccfully had it) we might walk into Carlisle jail, " and no mistake," for our boldness. We should add that we are indebted to the Editor of the* Carlisle Patriot *for our report.*

A Friend *sends us a prospectus of a new scheme—" The London Worm Fever Institution." From it we learn, that " worm fever carries off nearly one-half of all those born,"—that " beautiful faces are daily seen in the streets, with bodies deformed by worm fever, and their growth checked,"— and that the memory of donors to the institution " will be embalmed to the latest posterity,"—as dolts, we suppose. One of its objects is to prevent* " hip joint," (!) *and this is stated, with the others, to have received the sanction of " some of the most eminent and talented physicians and surgeons of this vast metropolis." Alas! what will not men do and say, rather than wait starvation.*

Observer *and we are not of the same opinion. Giving even Mr. Wakley his due, his observations in the daily papers, on the use of cabs to convey patients to the Fever Hospital, are, despite his avowal of them, very sensible and very judicious. The practice is as bad as private assassinations. This is not, indeed, the first time we have heard a just observation from that honourable gentleman. Our correspondent writes as if difference with Mr. Wakley was a compendious cut to good sense—and must, therefore, not be surprised if he find himself once or twice in error in the twelvemonth.*

A Constant Reader (Bath) *may rest assured that the College Charter is a settled thing. The time for publication is not yet arrived, but when it comes, our readers may prepare themselves for odd revelations. Many of the select are not chosen—and many of the chosen are not select.*

Ubi dolor, ibi digitus.—*We must think more over the paper; and, in the mean time, can we be furnished with the writer's name?*

Jacotot *is inadmissable, except as an advertisement.*

Fair Play, *in answer to Cymro, asserts that his facts shew a difference of periodic movement, and a difference of the same movements in the same animals under the different circumstances of health and disease. They therefore, he says, confirm the theory of periodicity, and demolish that of multiples. Dr. Dickson's " Fallacies" are referred to in proof, a present of which is intimated.*

Mr. N. offers us opinions far too flattering to anything but our intentions, *which cannot be overpraised. We receive his good wishes with thankfulness, and of course his proffered services. If all our friends* did *for us the canvassing duty our friend so kindly promises. our gratitude and usefulness would both suffer increase.*

Mr. Joe Burns, Waiter, &c., *vents in a long letter to us, his aspirations to distinction in the College of Surgeons. As proving a probable prospect of success, he affirms that a certain member of the present group of " examiners never could have dissected a body, that he can't distinguish one nerve from another, that once in his examinations he confounded the* velum interpositum, *or* velum vasculosum, *with the velum pendulum palati; at another, the* origins of the par vagum *with those of the optic or olfactory nerves, and mistook the* arteria-colica-dextra, *for the arteria-meningea-media, that he is perpetually making such blunders, and insisting on the correctness of his statements, to the intimidation of modest and gentlemanly candidates aware of his errors." If this be so, (and our correspondent applies all this to a named gentleman whom we will not designate)—the sooner we hear of an examiner's resignation the more creditable to one, and the better for all parties.*

This paragraph was accidentally omitted at the end of Mr. Close's paper, in a former number:—" The analysis of the various kinds of food, with the amount of *proteine* contained in each article, and its cost comparatively arranged, would be a work of considerable importance and value at the present time. This has been partially done by Mr. Ransome, an intelligent surgeon of this town, and the results stated in a paper read at the Royal Institution Converzatione. I wish the memoranda were published. The fact was fully elicited that *pea soup* was by far the most nutritious and cheapest compound as an article of diet; containing a much greater proportion of *proteine* than either flesh meat, flour, oatmeal, or potatoes."

We have received an announcement of the death of Dr. Carswell, of Liverpool, a gentleman enjoying the largest practice in that town, and the man most loved and esteemed by his professional brethren, of any provincial physician.

A. B.—*All the volumes, except vol. 2, are on sale.*

Gentlemen who have forwarded communications, not noticed, are requested to think them declined, or under consideration.

All advertisements and information for the Students' Number, are requested to be sent as early as possible.

EXTRAORDINARY INQUEST.

On Monday last, an inquest was held at the house of Elizabeth Barnes, Lowther Arms, Beaumont, before W. Carrick, Esq., solicitor, of Brampton, county coroner, upon the body of James Clarke, who had died the Friday previously.—Considerable excitement prevailed in the township on the occasion, as the deceased had been ill for a long period, during which his case had been treated by various medical men, and the feelings of the neighbours were strongly expressed as to the absurdity of holding a coroner's inquest on the occasion.

The coroner having told the jury that they would have to inquire into the cause of the death of James Clarke, proceeded to call the following witnesses:—

Mr. W. Bousfield Page, of Carlisle, who being sworn by the Coroner, said—I am surgeon to the Cumberland Infirmary. I have held the office about a year and a half. I knew the deceased, James Clarke, by sight. I saw him at the Infirmary. I don't remember when he came there, but I should imagine it was the latter end of last year. I don't know the month. I might have seen him when he first came, but I cannot positively say, as I don't remember his first coming. I should think I saw him, if Dr. Barnes was not at the infirmary. I suppose he stated he came because he was not well, but as I do not remember when he came, I don't remember any particular conversation with him. I do not particularly remember treating him as a patient, but I might have done so in the absence of Dr. Barnes, whose patient he was. I know he came to the infirmary several times before he was admitted an in-patient, but I don't remember the days. I believe he was admitted about the middle of December. I don't remember ever examining him, but I can't say. My impression is that I did not, but I can't say positively. It is nearly a year ago. There are no books that would assist me, but the one containing an entry of his admission. I read a copy, the entry from Dr. Barnes's book. The entry is, "James Clarke, 50, Beaumont, 19th October, *rheumatismus, morbus coxarius.*" This book is kept at the infirmary. The last entry relating to the diseased is, "James Clarke, admitted 14th December. Discharged, relieved, Jan. 11." Under the head "Treatment," it says—"Quinine, &c., and cupped." I never treated the deceased as an in-patient. I think it possible I might have treated him on some occasion as an out-patient, as I am more frequently at the infirmary than Dr. Barnes. I might have seen him and prescribed for him until Dr. Barnes had done so, or in his absence; but I do not recollect his particular ailment, or the treatment I prescribed. It would be impossible I could do so, seeing so many patients as I do, and it being nearly a year ago. I remember the circumstance of his leaving the infirmary, and his expressing himself exceedingly grateful for the benefits he had received. He did not express himself so to me personally, but before the committee, when he went in to them as all patients do. I mean patients are always seen by the committee before they leave the house. I saw the deceased walk into the room with a stick. I cannot of my own knowledge say whether he was better or worse than when he entered; but I recollect he expressed himself grateful for the benefit he had received, and said to the committee he was better, which I should think he would not have done if he did not feel relieved. I have since heard from the matron, and others in the house, that he so expressed himself to them. The book I saw this morning, and from which I took the entries, shows the general treatment, and that it was tonic, with local applications. I think the local applications were to the hip, as the disease is described "*morbus coxarius.*" There is only a short line describing the treatment. This is up to the time the deceased left the infirmary. I never attended him afterwards. Mr. Burch is the house surgeon of the infirmary. He would have the general treatment of the case. He is absent to-day; he went this morning only. I should think he would return this afternoon. The deceased was a patient of Dr. Barnes; his name is not in my book. It is entered on the physician's register.

Dr. Jackson—Did you ever apply a blister to the knee-joint of the diseased?

Mr. Page—Never, that I am aware of.

Mr. T. Elliot—Is it usual for the physician of an infirmary to treat hip disease?

Mr. Page to the Coroner—Am I to answer these questions?

The Coroner—Oh, certainly.

The question having been repeated,

Mr. Page then said—It is a surgical case, but when a patient has in addition rheumatism and great general debility, it would with very great propriety come under the care of the physician, and I should think Dr. Barnes quite competent to treat it.

Mr. Hodgson—If a patient is afflicted with rheumatism, general debility, and hip disease, which do you consider is attended with most danger?

Mr. Donald objected to any hypothetical questions, as irrelevant.

The Coroner considered his a court open to receive information generally, and said he was happy to receive every assistance in the inquiry.

[The question was not then repeated, but it will be seen it was subsequently put.]

Mr. T. Elliot—Then you think the disease of the hip was the cause of the debility?

Here two or three of the medical men put questions at once to Mr. Page, but the jury interfered, and one of them said it was too hard for Mr. Page to be so questioned. The coroner then said, "One at a time, gentlemen," and the cross-examination proceeded.

Mr. Page—I did not say so.

Mr. T. Elliot—Yes, you did, just now.

Mr. Page—I beg your pardon, I did not. I should think the reverse might be the case.

The Coroner here referred to his notes, and told Mr. Elliot that Mr, Page had not stated what he (Mr. Elliot) said.

Dr. Jackson—I wish to know the cause: was it debility?

Mr. Page—I should consider that the disease of the hip-joint might be in a great measure the consequence of debility. The debility was very probably the superinducing cause; the disease would arise in a debilitated person more readily than in one in health. I do not see, however, what these questions have to do in the case. It is immaterial which disease was the cause of the greatest danger, or who treated it.

Mr. T. Elliot—Do you remember seeing the deceased in the infirmary on his legs?

Mr. Page—I believe I did on one occasion, when he was about to be cupped.

Mr. T. Elliot—Did you ever see him up, or was he always in bed?

Mr. Page—I can't say. I paid no particular attention to him that would enable me to remember. I attend to my own patients, not to those of Dr. Barnes.

Mr. Hodgson—Will Mr. Page say which is the leading disease, hip disease, rheumatism, or debility.

Mr. Page—I should consider that the leading disease which was most prominent at the time.

Mr. Hodgson—Which do you consider the most dangerous?

Mr. Page—Death results from all the three, and I have seen them all cured.

Mr. T. Elliot—Was the man relieved of his debility while in the infirmary?

Mr. Page I cannot say. I did not ask him, but I did hear him say, generally, that he was better.

Mr. Hodgson—With regard to the hip disease, is it possible for it to be so ameliorated, as to be relieved, a few months before the man's death?

Mr. Page—I see no reason why it should not, and I have seen hundreds of cases treated.

[Here, some of the medical men smiled derisively.]

Mr. Page—I repeat, I see no reason why it should not; and I have seen, I dare say, hundreds of cases of hip disease.

Mr. T. Elliot—Can you recollect seeing the deceased in the infirmary? Was he bed-fast or not?

Mr. Page—I cannot say. I did not attend to his case.

Mr. T. Elliot—Can you recollect seeing him walk about the infirmary?

Mr. Page—I cannot.

Mr. T. Elliot—Have you seen him in bed?

Mr. Page—Certainly: I must have done so, because I have frequently been at the infirmary at night, and then he must have been in bed.

Mr. Page by the Coroner—I have now given all the information I can give about this case, and that information is derived from the entries in the book of Dr. Barnes. The fact is, I have been summoned to give evidence on a case about which I know nothing; my firm conviction being, that I never had the least to do with the deceased.

After this lengthened cross-examination of Mr. Page by the medical men, the Coroner called and examined

Jane Clarke, who, being sworn, said—I am widow of the deceased. My husband was in his 51st year, and was employed as a husbandman. I remember his going to the infirmary, as an out-patient, about harvest-time last year, either in September or October. At that time he thought he had rheumatism. He was affected at times in his knee, and his thigh, and all on his left side. He was lame from it, and went on two sticks. This was while he used to go in a cart to the infirmary. He used two sticks sometimes, and sometimes one. He was lame. He went to the infirmary in a cart. I did not go with him. He returned the same day. From the time he began going, he went there once a-week.

Mr. Page—On what days?

Jane Clarke—On Wednesdays, I think.

By the Coroner—He went alone. I never went with him. I think he was cupped the first time he went.

Mr. Page—Where was he cupped?

Jane Clarke—On the hip, I believe.

The Coroner—Mr. Page, you must not interrupt the proceedings—you have an opportunity of asking any questions afterwards.

Examination resumed by the Coroner—My husband brought some bottles home with him—some water and turpentine, I think, to take. He took it night and morning. It was taken inwardly. He did not receive anything to rub upon his leg, that I remember. He went to the infirmary once a week, from the time he went first, to the week before Christmas. He

remained in the house four weeks. I went to see him once or twice. I never met the medical gentlemen there. I saw the house doctor once. I don't know his name. My husband said it was the house doctor. When I saw my husband, I always found him in his ward, but once I met him in the passage. He was then coming to meet me, having seen me from the window. He had two sticks then. He did not say he was better. He turned worse for a while after first going into the infirmary. He walked about occasionally, I believe. I think he was not forbid to do so. He followed no employment while there. He did not go out of doors, I think. He did not go further than the door or so. I never found him in bed when I went. He never lay in bed. He turned rather better after he had been in the infirmary a while. He grew better of the weakness of his body, but his leg never grew better. I never heard him say it was better. He took some medicines—bitters, I think. He told me he was blistered once on his knee. He said he was put into warm baths twice, but I cannot recollect anything else. He went to bed, and rose about 8 o'clock. After remaining a month he came home. I went to meet him to Caldcoats. I did not take a cart. We met one on the road. He was in the house of one Christopher Irving, waiting for me. That was about a quarter of a mile from the infirmary. We then took him home in a cart. I did not hear that he had any instructions from the infirmary as to how he should treat himself. They gave him some bottles. I think he did not find himself any better. He said he told Dr. Barnes he would go home, as he did not feel any better, and he gave him leave, and said he might do as he liked. His leg and thigh were no better. He had walked from the infirmary to Caldcoats with two sticks. He could not walk with one. The officers of the infirmary did not attend him afterwards. One came the night he died. It was the house doctor, I think. His leg and thigh turned worse up to the time of his death. He died on Friday night. After he left the infirmary, several medical men attended him. They were Mr. Hodgson, Dr. Jackson, and Mr. Elliot. They came several times. I cannot say how soon after he left the infirmary they attended him. He was going about with two sticks when they first saw him. They came backwards and forwards up to the time of his death. He has been confined to his bed seventeen weeks—ever since he has been lifted on to a table. Doctors Jackson and Elliot lanced his thigh on their first visit—a Thursday night, I think, and he went to bed on the Saturday night, and never got out of it again, except when he was lifted. He took physic on Friday. There was matter and blood gathered about the joint, when these doctors first saw him. They gave him no medicine. They ordered none that I recollect. [Here Mr. Elliot handed a paper to the Coroner.] I cannot recollect their doing anything else for him. His diseased thigh was a good bit shorter than the other.

The Coroner—Mr. Elliot suggests that they gave him bitters?

Witness—Yes—but that was lately. They also put an issue [a seaton] in.

Cross-examined by Mr. Elliot—The medical men I have named last directed my husband to lay in bed, and keep quiet. A piece of wood or splint was put on his thigh, but he could not wear it, and the doctors took it off again on the Tuesday. His diet was ordered to be light pudding, and so forth, but nothing heating.

By the Coroner—From the time the doctors cut him, there was no improvement whatever in my husband.

By Mr. Elliot—He had much pain for several weeks in his limbs, from the hip to the foot. This was for several hours together. This was the first six or seven weeks that he lay in bed. He always had pain, but not so violent before. He was a man of good constitution, and strong and healthy, until this came on. He had the pain in the thigh twelve months or so before he died.

One of the jurors here said the deceased had been afflicted many years. The pain came and went.

Jane Clarke, by Dr. Oliver—My husband just went about, but he did very little of late.

By the Coroner—It is two or three years since the lameness began. There was always pain, but it was not always equally severe. His general health was good before last year, when he looked thinner. There was no wound in his thigh but what the lance had made. There were gallons of matter ran from that wound. He had also a sore upon his back, but that was from lying.

By Mr. Elliot—I heard him say that rheumatism was marked on the board of the chimney-piece as his disease. I saw the board, but cannot say what was on it.

By Mr. Page—My husband called his disease rheumatism before he went into the house, and he called it so still, until the doctors came. I mean Mr. Elliot and Dr. Jackson.

By Mr. Elliot—I recollect my husband's leg being rubbed with a white salve to bring out pimples. Both his leg and thigh were rubbed. This was when he was an out-patient of the infirmary. The salve was given to him at the infirmary. It produced little bags like the natural pock.

By Mr. Page—I think I went twice or three times to see my husband in the infirmary. Once when he met me in the passage he saw me coming. I don't know that he was told to remain in his ward; he never told me so. He was allowed to do as he liked, for anything I know. He walked a quarter of a mile to meet me when he left the infirmary. He never went again to the infirmary. He never asked any medical men to see him; they were in the town and came to see him. I never sent for any medical men. None of us did that I know of. Mr. Gilkerson came in the first instance with Mr. Elliot and Dr. Jackson.

By the Coroner—Mr. Gilkerson was a neighbour; my husband wrought for him about three years ago, and since at times, but not for a good while.

By Mr. Page—The medical men told my husband that he had a disease of the hip, and that he had not the rheumatism.

Mr. Page pressed the question whether the deceased had been told that he had not been properly treated in the Infirmary; but the coroner said it was not evidence, and thought it better the question should not be pressed, making some general remarks upon what was due to the feelings of the witness, who he said, had been already under examination a long time.

By Mr. Page—My husband was lanced on the Thursday night, and never got up afterwards. He got gradually worse. The gathering came where he had been lanced. There was no amendment, the wound was discharging all the time. He took the bitter medicine a few weeks. [Mr. Elliot here said it might be about six weeks ago.] His appetite had failed before he began to take the bitters. I don't know what was on the board in the infirmary; my husband told me it was "rheumatism." He did not tell me there was anything else written there.

The Coroner asked if the Jury had any information to give that would assist the enquiry?

James Sewell, one of the Jurors, being sworn, said—I am a farmer. I have known James Clark twenty-eight years come Candlemas. He was a strong and healthy man in his former life. I have noticed him rather lame, we thought with the rheumatism, this eight or ten years back. Last summer he excused himself paying me rent for a small field he occupied, as he was off his work, and could not till it. He grew worse, still thinking his complaint the rheumatism. He was whiles easier, whiles worse; nothing particular happened until he went to the infirmary. I remember his going there once a-week. He told me many times how he was; but he said he was not a bit better. He said he thought there was no betterness for him in this world; he said that Dr. Barnes wanted him to throw his sticks away and try without them. He said "Dr. Barnes would fain have me better, but I am not." He said they were particularly kind to him at the infirmary, and that he was well treated. I can't say if he ever came home while he was an in-patient, but I should think not. I saw him the Saturday after the other medical men saw him. He told me that Dr. Jackson and Mr. Elliot had told him that the disease was from the hip joint, and that he was to have a board put on. He was then able to take his victuals well. He was shaving himself nicely when I saw him, and had not failed much in his flesh. I do not recollect his coming home from the infirmary. He came down to our house afterwards, and I was told they had returned thanks for James Clarke's recovery in church, and I was hurt at it, as I heard him say he was no better. He was much the same when he came out of the infirmary as when he went in. We had a good deal of talk, but I can't recollect all the particulars. He said if he touched a stone with his foot he was like to drop. He was then able to walk with great difficulty on two sticks. I was not there when thanks were returned in church. He was not improved when he left the infirmary. He told me so himself. I can tell nothing else.

By the Coroner, on the suggestion of Mr Steel—The deceased did not tell me that Mr. Page had attended him; but he said he heard he was a very clever man. We know a deal about the Infirmary at Beaumont, and that the patients are well treated.

By Mr. Page—I saw Clarke after the issue was put in; he was in great pain. He said he never knew what pain was until then. He naturally grew worse until he died.

The Coroner then said—Unless any person is ready to give further information, it will be necessary to adjourn the inquest to hear the evidence of Dr. Barnes and Mr. Burch, who were the principal medical attendants on the deceased.

Mr. Sewell, a Juror, said he thought it quite unnecessary that Dr. Barnes should be teased upon the subject. He, and he thought his brother jurors also, were sure that all the medical men had treated the deceased to the best of their ability, but the man died notwithstanding, and there was an end of it.

The Cororer said that from the information he received, he felt it his duty to hold an inquest, that a jury might ascertain whether the deceased had died from improper treatment or not; for if such was the case, then medical men who had so treated him were amenable to the laws of their country.

Mr. Sewell thought the jury were not com-

petent to decide upon the propriety or impropriety of medical treatment, and that it was therefore useless to call more medical men before them.

The Coroner said he would do what he considered his duty in the case, and call what evidence he thought proper.

It was here intimated to the Coroner that another of the jury had some information to give, when he called..

Thomas Todhunter a Juror, who, being sworn, said—I live at Beaumont, and was a neighbour of the deceased. I was also an out-patient of the infirmary during part of the time he was there. He was an out-patient, and we went frequently together. We went in his own cart. I was not present when he was treated bythe medical gentlemen. Dr Barnes saw him. The deceased always went into Dr. Barnes's apartment to be examined. He generally came home with me again, He never told me what his complaint was called. He never told me what he was recommended to do. The last time I was with him he was very lame, and had great difficulty in getting up the steps of the infirmary. He went into the house soon after that. I saw him once while an in-patient of the infirmary. He was then sitting by the fire in his bed-room. He said he was little better, that he was weakly in his body, and he thought that made him worse. It was shortly after he went in that he was poorly, but I did not see him for a fortnight afterwards. I believe I saw him the night he came home. He was no better than when he went. He was not so lame as when he could scarcely get up the infirmary steps.

The examination had here apparently terminated when Mr. Page intimated to the Coroner that the juror had something more to say.

Mr. Steel—How do you know that, sir?

Mr. Page—Because he has just told me so.

Mr. Todhunter then stated—I went frequently to see the deceased, both before and after he was cut, and upon one occasion I went there after two doctors came with Mr. Steel, who took a paper out and wrote down his statement of how he was treated. The deceased was a quiet man, and said he was very much hurt at it.

Mr. Steel—Were you present when that was done?

Mr. Todhunter—I was not, but the deceased told me of it.

Mr. Steel, to the Coroner— That is only hearsay evidence; I presume you won't put it down.

The Coroner—It is a statement of the deceased to witness, and I have received that as evidence all along.

Mr. Todhunter resumed—The deceased told me that Mr. Steel had taken down how he was treated, and said he had wished they had never come, as he thought they came more for mischief than any good to him.

Mr. Sewell, a juror—There was more truth than good manners in that.

Mr. Todhunter resumed—I did not hear the deceased say anything more in particular. He told me he never sent for the other medical men, he wished they had never come.

By Mr. Steel—I am now a patient of Dr. Barnes. I never heard the deceased say he was very much obliged to the other doctors for having come. He said he was very much hurt when Mr. Steel took the paper out. The wife of the deceased told me she was to call for something the next day in Carlisle. [Mr Steel—you mean she went to a person whom you say had done her husband's harm. Was she directed to go to Carlisle in the presence of the deceased? Witness—yes.] The deceased was then present. On Saturday the wife was delayed in consequence of calling for something there.

The Coroner then charged the jury to be very careful in expressing any opinion on the case, or making it the subject of remark until they delivered their verdict, and adjourned the inquest to Thursday morning at ten o'clock.

Adjourned Inquest—Thursday.

The proceedings were resumed shortly after ten o'clock on Thursday morning, and we noticed amongst the medical men present, Drs. Barnes, Jackson, James, Oliver, and Lonsdale; Surgeons Messrs. Hodgson, Page, Elliot, Linton, and Burch. Mr. Nanson, the solicitor, attended on behalf of the Governors of the Infirmary; and Mr. J. R. Donald, the secretary, was also in attendance.

The jury having all answered to their names, the coroner called

Dr. Barnes, sworn, said—I am physician to the Cumberland Infirmary. I have held the appointment nearly two years. I knew James Clarke, the deceased. I first saw him (I see by the book) on the 19th Oct. last, He came to the Infirmary, That was the first time he came there, that I know of, as a patient. I examined him, and found him affected with rheumatism. He complained of pains in his hip, thigh, knee, and leg. He said he had been afflicted several years, that he was sometimes better and sometimes worse; that he had more pains in his hip and thigh at that time than any other part, on which account I entered in the book "*morbus coxarius*," or disease of the hip joint. It is the book I keep at the Infirmary. The first prescription is "*emplastrum lytæ* (a blister.) At the same time there is a mixture of spirits of turpentine, 8 oz. I did not see him again until the 2d Nov. That was all that took place at the first interview. When he came on the 2d November, the prescription stands thus, "Let him be cupped on the left thigh, to 10 oz. repeat the mixture." It is not mentioned when I ordered the blister to be applied on the first occasion. The next time he came was on the 16th Nov. I saw him then, and the mixture was again repeated. On the 23d a blister is directed to be applied to the painful part of the thigh. I am reading these directions from the book. On the 7th September, he was ordered to be bled, 12 oz. from the arm, 10 grains of Dover's powder to be taken at night —that is a sweating powder. The next morning a dose of electuary and some salts. That is all in this book. The entry at the top of the case is, "Jas. Clarke, aged 50, Beaumont. No. 15."

The Coroner here examined the book, and asked if the gentlemen of the jury wished to look at it. It was handed to the jury.

Dr. Barnes resumed—He was labouring under chronic rheumatism when I first saw him. I am now going to speak of him as an in-patient. I read an entry of his admission, "at a meeting held the 14th December, 1842, present the Lord Bishop of Carlisle, Major Maclean, Major Wilson, Mr. Joseph Fergusou, Lowther-street, Mr. T. H. Graham, Rev. J. Thwaytes, Rev. T. Wilkinson, Rev. William Rees, Dr. Barnes, Mr. Page." The resolution applying to the deceased, is, that James Clarke be admitted on the recommendation of Mr. Thurnam. That is all in that book. I was present and received James Clarke on that occasion. He was afflicted much in the same way as he was at first, but he was not in so much pain as when I first saw him. The next entry was in the Physician's Register. The ticket was kept at the head of the bed on which I entered my prescriptions but it cannot be found. It is not usual to keep them. I produce the Physicians' Register kept by Mr. Burch, copied from my ticket. It is an abstract of my ticket, and not a copy. "1842. No. 8. James Clarke, aged 50, married, residence Beaumont, occupation labourer, date of admission. discharged December 14, 1843, disease rheumatism, &c—relieved. The treatment tonic, cupping, subscriber's name, Mr. Thurnam." That is all the entry I can find on the books. I can give no evidence touching the death of James Clarke, as he left the Infirmary alive, and I have not seen him for above a year and a half. When he left the Infirmary, my impression was that he might live some years. He had no complaint on him then likely to prove mortal. I remember the circumstance of his leaving, he was in less pain than when he came to the house, and less lame. though he was lame. His general health was improved. I considered his lameness incurable. and did not therefore wish to keep him in the house. I saw him frequently while an in-patient, and he was under my charge. I have not seen him since. I have stated all the treatment as far as I remember, but I think he also had a warm-bath. Nothing more is entered on the books. Mr. Burch reminds me he also took some calomel and Dover's powder while in the house.

The Coroner then said, that at the commencement of the proceedings, he had omitted to state the course he intended to pursue with regard to the evidence, with a view to expedite the business as much as possible, he proposed that Mr. Nanson should take charge of the cross-examination on behalf of the infirmary officers; and that some one else should do so on the part of the other medical men, and if any governor of the infirmary were present, he would allow him to ask questions also.

Mr, Steel, the only governor present, bowed.

Dr. Barnes—cross-examined by Mr. Nanson—From the time I saw Clarke first until the 14th December, he was an out-patient. It is the rule of the institution that the out-patients should attend at the infirmary. The medical men do not attend the out-patients. When I prescribe, it is the duty of Mr. Burch, the house-surgeon, to compound the medicines, but he does not see them administered. The patient takes the medicine home. I do not remember that James Clarke gave any opinion as to the treatment he had received, He said he was satisfied, and better than when he came. He said so in my hearing. It is the practice of the committee, before the patient leaves the house, that he should come before them and make his own statements to them, upon his general treatment by the matron, the servants of the house, and the medical men. If he has any complaint to make, he may make it to the committee of governors. I do not remember Clarke making any statement, beyond his saying generally that he was better. I attend here by summons from the coroner.

The Coroner asked if there was any one to represent the medical men? But no one answered.

By Mr. Steel—He had not been blistered on the knee before I saw him,—that I am aware of. I examined his knee and hip joint carefully every time he came. At the first visit, the pain was on the left limb. The hip joint was not enlarged at all. I did not prescribe either for rheumatism or hip disease by name. I never do. I consider all the circumstances of the case, and then prescribe. No matter had been formed in the hip joint when I saw him. When matter is formed, a person may recover, if properly treated. I see no reason why Clarke should not, as there was no ulceration of the cartilages of the cup joint. I considered that walking about would do him no harm, but might be beneficial to his general health, but I desired him to keep his bed a good deal when he first entered the Infirmary. He said it made him worse, the heat of the bed increased his pain, and then I allowed him to sit up. The ligaments and tendons of the joint were diseased, not the cartilages. They had been affected for some years. There are different diseases of the hip joint. There is inflammation of the sinovial membrane, that which lines the joint—inflammation of the ligaments—inflammation of the cartilages—inflammation of the bone itself, and several other diseases. I don't blindly follow any authority in saying disease of ligaments is called disease of the hip joint. He was not then labouring under active inflammation of the hip joint, but chronic inflammation of the ligaments and tendons of the joint. Being so affected, there was danger of the disease extending to the hip joint, and becoming dangerous by any accident. Moderate exercise would not tend to extend it. The man had been accustomed to exercise for some years with his lameness. The symptoms of inflammation of the cartilages of the hip joint are, a violent pain, swelling, and apparent

elongation of the limb. They are the first symptoms. Symptomatic fever may set in much about the same time. It is an inflammatory fever. It is possible for a person in the disease of the hip joint to feel pain in the knee only, and not in the hip joint. It is a common thing, but there are other symptoms as well. In such cases we discover disease by taking hold of the limb, and pressing it upwards, when the man will call out. I tested the disease in various ways, to learn precisely what description it was of. I do not remember if he called out when I presssed his knee. I would remember if he had called out particularly. I have said before I did not treat disease by maxim ; I took into consideration every circumstance.

Mr. Steel—My reason for asking these questions is that Dr. Barnes had stated at a meeting of the governors of the Infirmary, that he had treated Clarke for disease of the hip joint.

Dr. Barnes—I said rheumatism and disease of the hip-joint.

Mr. Steel—It is entered on the book as disease of the hip-joint and rheumatism?

Dr. Barnes—It is. My reason for entering it with two names is because I found it a complicated case. I put it down as such. I have already explained what is disease of the hip-joint. If he had not been suffering from it I would not have put it down. The man complained most of rheumatism, but I consider he had a chronic disease of the hip-joint. I did not see him more than once a fortnight, and I do not think any one did. I would not have recommended his coming more than once a fortnight when an out-patient, but I see he did so on one occasion. I do not think he would recover of it. His going back and forward in a cart was not likely to increase the danger. The kind of disease I have described as that of the deceased may exist without danger to the patient's life. He may live many years. I never expected he would recover. He was more likely to recover from the contraction of the ligaments by being allowed to walk about. I think he would have died if I had allowed him to lie in bed. He could not lie in bed on account of the pain. His general health would have sunk under it. There was contraction of the ligaments, the joint was stiff. The proof of this is, there was not a free use of the limb. It could be rotated in some measure, but not fully. The contraction of the ligaments which the patient had was the *morbus coxarius* I speak of, and I think was occasioned originally by articular rheumatism—by rheumatism of the joint. Hitherto I speak of his case as an out-patient. When he became an in-patient his suffering was not more. I examined him repeatedly. I dare say I tried him again by pressure of the thigh against the body, but I am not quite sure. I tried him every way I thought necessary. I speak of the whole time he was an in-patient. I desired him to show me how he could walk sometimes. He was always in pain when he walked, but less then than when he first came. The pain he suffered when he walked about did not lead me to think his disease more serious. He liked to walk about, and had more pain when in bed. I should have thought the disease more serious if there had been swelling of the joint and marks of suppuration.

Mr. Nanson suggested that the jury should ask an explanation of any expression they did not understand.

The Coroner advised the jury to act on the suggestion.

Cross-examination resumed—Pain is caused by the pressure of the joint previous to the formation of matter. This is my opinion. Pain exists on compression when there is much disease in the cartilage. The deceased was in a favorable state when he left the Infirmary. He was lame, but not so lame as he had been ; and I thought he would be lame as long as he lived. In the state the was then in, matter might form in two or three weeks if inflammation set in. An accident might cause it; an injury would cause inflammation. I have told you before that the cartilages were not affected. He could bear very little on his left limb. The pain from the rheumatism of the limb prevented him from walking, as the motion of the limb pained him. When he stood quiet he did not feel much pain, even if he leant some weight upon the limb. In chronic inflammation of the synovial membrane rest might sometimes be serviceable, but it would not cure it, I think. I did not think it necessary to keep the patient in bed. I have said before he could not lie in bed, as the heat of the bed increased his pain. If there was inflammation of the joint, motion would increase he inflammation of the sinovial membrane, but in my opinion there was not inflammation of that membrane in this case. There was chronic inflammation of the ligaments and tendons about the joint, but apparently none in the joint itself. We could rotate the joint a little, and he did not complain of it. What I meant by putting down *morbus coxarius* was the inflammation of the ligament, but the term is applied to all diseases of the hip joint, and more particularly to a scrofulous affection of it.

By Mr. Nanson—The frequency of the attendance of out-patients depends on themselves.—Sometimes we request them to come often, and sometimes they come of their own account.

The Coroner asked the jury if they wished to put any questions, but they declined.

Mr. Burch, on being called, asked if he was summoned to attend that inquest as a medical man.

The Coroner—I presume so.

Mr. Burch—Then I must inquire if I am to have my expenses ?

The Coroner—I shall not tell you, sir, but if you refuse to be sworn, I shall commit you to Carlisle gaol, and no mistake.

Mr. Burch then consented to be sworn, on the suggestion of Mr. Nanson—My name is Samuel Jessup Burch. I am house-surgeon to the Infirmary. I have been there about eighteen months. I cannot remember whether James Clarke came as an out-patient or not, until about a week before his admission as an in-patient. I saw him probably as an out-patient, and gave him his medicine, but I made no examination of him. I did not know what was the matter with him while an out-patient. I merely made up the medicines. I remember well the day of his admission as an in-patient. He was received as in-patient under Dr. Barnes, the physician. I was in the house the day he was admitted, but I can't say I was present when Dr. Barnes examined him previous to his admission. I believe I went with him into the committee room. I don't remember my being present when Dr. Barnes made a professional examination of the man. I examined him, at the time I cupped the limb, by Dr. Barnes's directions. That was while he was in the house. I can't speak to what took place before. He was cupped at the beginning of his residence. I examined him on that occasion. He appeared to be labouring under chronic rheumatism on the left hip, thigh, and knee ; but mine was a mere casual examination. He was then on his bed previous to being cupped. I believe he had also blisters applied in the house. They were applied over the hip, and he might have a blister elsewhere, but I cannot speak to that now. I also made up his quinine mixture for him. Quinine is the active principle of bark, and is a tonic. He also had powders at bed-time, composed of Dover's powder and calomel. I cannot recollect anything else just now. I examined him casually by taking hold of the left limb. I took it by the leg and moved it in the socket. The patient did not complain of pain in particular when I put him to that test. I examined him in no other way. I have stated all I did to the man, or for him, to the best of my recollection, but I have so many patients to see that I cannot recollect particularly. I made no entry in the books, but I did write on the piece of paper which was attached to the board at his bed head. These papers were not then kept, but during the last two or three months they had been kept. The book contains a description of the general treatment, as to the mixtures and the cupping. The entry on the paper, I believe, also stated powders and warm baths, but these are not noted in the book. The paper on the bed head contained particulars of his diet, and the general remedial agents employed. The book does not contain all these. The paper was the only place where they was entered. I wrote down on the paper the day the man was admitted—rheumatism. No one gave me directions to write that. I do it without telling generally. I saw the man when admitted, and concluded he was labouring under rheumatism from the statement he made of the symptoms he was labouring under when he came in, and that was the heading which remained on the board until he left. The patient was part of the time kept in bed, and part of the time he was allowed to walk about. At first I believe Dr. Barnes desired him to remain in bed, or to keep quiet, but I cannot speak positively to it. I cannot speak positively as to the directions that were given him. He walked about the latter part of the time, for I remember one or two instances when he was out of his ward. I believe he walked only in the house. The diet of each patient is carried to his ward, and he eats it in his own room. The patients who are able to walk about assemble while the chaplain reads prayers in one of the wards. I believe the deceased attended prayers the latter part of the time he was there, but I don't remember his doing so at the commencement.

By Mr. Nanson.—The meeting at prayers is sometimes once and sometimes twice a week, but always once. As house surgeon I merely follow the directions of the physician or surgeon, as the case may be, except on an emergency. I am a member of the College of Surgeons in London, and also of the Society of Apothecaries there. I was house surgeon to the London Hospital for twelve months before I came, under Mr. Andrews, the President of the College of Surgeons. The London Hospital is fit for the reception of between 400 or 500 patients. The diet was put on the paper over the bed head, and the deceased was ordered nutritious diet.

By Mr. Steel—I was admitted a member of the College of Surgeons in 1840. I was visiting assistant to a surgeon in Spitalfields, London, nearly a year before I was admitted. The book produced by Dr. Barnes is the only book kept of the treatment of the physicians' cases at the infirmary. It merely describes date of admission, name of patient, age, occupation, and a very general statement of the mode in which he was treated. It was more as a register than anything else. In a case of doubt, or if a patient during the absence of the physician, is attacked by illness or any fresh symptoms of an alarming character, I should mention such cases to the physician, but in the ordinary course of cases no notice was taken. I generally attend Dr. Barnes in his examination of patients, but I am sometimes out when he comes, as he does not always come at the same time. In my absence the nurse could attend him. I probably attended him when he saw Clarke, but I remember nothing particular of the case. If I had anticipated such a thing as this I would have watched the case. When I examined the limb I saw no swelling of the knee. In articular rheumatism there would be swelling in most cases, but Clarke had general rheumatism, and there was no swelling that I saw when I made a casual examination of the limb. I ascribed the pain of the knee to general rheumatism of the limb. When I turned the limb I could not move it without moving it up against the top of the cup in some degree. I could rotate the limb by pulling it down, but the motion would be in some measure upwards. My object was to ascertain the state of the limb. By *morbus coxarius*, I mean hip disease. There may be disease of the cartilage, entering into the formation of the joint, disease of the sinovial membranes, the membrane lining the joint there may be disease of the bone itself, and of the ligaments. I have stated before, that this case of Clarke's was one of chronic rheumatism. I have not entered it as *morbus coxarius*, that entry is in Dr. Barnes's book. I kept the in-patient register, and it is there entered as rheumatism. I did not put down the "&c." Dr. Barnes has access to this book, and would probably alter it if he saw I was in error. I made out the paper over the bed head; from my own knowledge of the disease, which might differ from that of Dr. Barnes. He might have made up his own mind as to the case, while I would only put down on the board the

general symptoms that were most prominent. He might note all the diseases of a patient, while my attention might be limited to the more prominent one. I did not detect that the patient laboured under any of the kinds of *morbus coxarius*, I have mentioned. It is a disease not difficult to detect in the advanced stages, by the shortening of the limb, the flattening of the buttocks, and the pains. A surgeon of ordinary practice might overlook it, a man of experience would not do so. He would detect it. I think a man of three or four years experience would overlook the disease called *morbus coxarius*, in its earlier stages. I don't think he ought. In the case of this man I don't think I should have overlooked inflammation of the synovial membrane, or of the tendons, or of a caries of the bone, or any of the diseases that might be included under the term *morbus coxarius*, but, as I said before, I only casually examined the part when I was about to cup him. If I had discovered the symptoms, I should have treated the disease with rest, and applied mechanical means to the part. I speak of the commencement of active disease of the hip. I should apply mechanical means to give the limb rest, and also in some measure to produce a degree of healthy action about the part. I don't consider rest necessary when the disease has advanced to the thickening of the ligaments, and a perfect stiffening of the joint.

By the Coroner—Dislocation comes on sometimes in two or three years, sometimes sooner from an injury, but it does not come on immediately, the time is uncertain. The shifting is after the gathering, if any comes on. I speak of cases generally, and not in the case of this particular patient. In ordinary cases suppuration comes on before the stiffening of the joint, if any thing happens to produce inflammation.

By Mr. Steel—I mean to say that diseases of the ligament are in the term of disease of the hip, whether that disease be chronic or active. A stiffening of ligaments round the joint constitute a form of the disease called *morbus coxarius*, as the ligaments are implicated in the general disease. Their stiffening may be part of the disease. The stiffening is not one of the first things that take place in *morbus coxarius*. The first symptom generally is inflammatory affection of the synovial membrane perhaps. The stiffening of the ligaments is a consequence of the disease of that part of it called anchylosis. I call that disease of the hip-joint, but a state of inflammation of the synovial membrane may arise in cases of chronic rheumatism, which will sometimes go on to a disease in the hip. They sometimes stand in the relation of cause and effects. Diseases of the ligaments of the part are included by writers as disease of the hip. I can't speak to the *morbus coxarius* in the book of the infirmary. I have nothing to do with that. Writers include in disease of the hip, the disease of the ligaments. I have always undesrtood *morbus coxarius* as principally a scrofulous disease of the hip, occurring in young patients, but writers include the term under disease of the ligaments.

Mr. Burch to the Coroner—I believe you first asked the state of the man when he came in last. I did not answer, owing to so many questions being put at once. He was then labouring under general debility, upon that he was treated with tonic medicines, and nutritious diet, and when he went out he expressed himself greatly relieved, and exceedingly thankful for what had been done for him.

By Mr. Steel—The word &c. in the book is not my hand writing. I don't know whose it is. The book passes into the hands of Dr. Barnes, and he might have corrected my error. I entered the case as one of rheumatism. I can't say when it was put in.

By the Coroner—As far as my observation of the case went, it was treated on general principles.

The Coroner asked Mr. Nanson if there was any witness he wished to have examined.

Mr. Nanson—No. I have no suggestion to make.

The Coroner then proposed to call the matron of the infirmary.

Sarah Masterman—being sworn, said I am the matron of the Cumberland Infirmary. I have been there since the 8th of March, 1842. It is part of my duty to attend to the patients once a day, or oftener. It is my duty to see the nurses do their duty, to look after the cleanliness of the establishment, and to ask the patients how they are, and to let me know if they require anything for their comforts. I remember the patient James Clarke; he was much afflicted with pain. I remember his coming to the infirmary, but not before the day he became an in-patient. I don't know where his pain was; in the morning when I asked him how he felt, he used to say sometimes better, and sometimes worse. He did not say where he was afflicted. He generally sat on a form in his own, No. 3, ward. I did not see him walk about at all until he went away. I always speak to the patients when they go out; but I never saw him walk except then; his ward is not upstairs. I saw him walk down the stairs of the infirmary into the yard. He came to my door on the day he left. He was then walking with two sticks, and a small bundle. He came to my door, and said he had been in the committee-room, returning thanks for the kind treatment he had received from the medical men and other people in the house. He returned thanks to me, and brought back what he had the use of in the ward, and he was very grateful for the attention he had received. He expressed himself better. He did not say why he was leaving. I think he was better. He required assistance to come up the steps when he came to the infirmary. I mean the steps of the yard. He went down with two sticks. He was assisted up the steps by his friends when he came. I saw him go down alone, with the assistance of two sticks. I am sure he was less lame than when he entered. He never told me where he was in pain, and when he complained said he was sometimes better and sometimes worse. I said, James, you alter as the weather alters. It is not my duty to apply blisters. I have only to attend to the food or cleanliness. I know nothing more of his complaint than what I have stated. He had a deal of colour in his face, but I can't say whether he was a strong healthy man or not when he came into the house.

Grace Reay gave similar evidence.

By Mr. Steel—I am sure the blister was applied to the knee. I applied the blisters by the order of Mr. Burch. When Clarke spoke of the good treatment, he spoke both of the kind treatment that he had within the house, and also as to what Dr. Barnes had done for him. He said he thought Dr. Barnes had done all he could for him.

John Davison—I live at Paddon Beck, near the infirmary, I am an army pensioner. I knew James Clarke, both times when an in-patient, and as an out-patient. I conducted him when he went to the infirmary. I helped him up stairs when he went in. I received him when he came out. He told me he was much better when he left, than when he went in. I received him, I put him into the car. He said he was much better, but not so well as he could wish. That's all I have to say.

By Mr. Nanson—He walked from the infirmary to my house, which is about 200 yards, with the assistance of a stick and my arm.

By the Coroner—I did not think him so lame as when he went. He said he had been cupped, and received a great deal of benefit from it.

By Mr. Steel—He went to my house after he left the infirmary. He went afterwards to Christopher Irving's in Caldcoats, in a horse and cart, a woman came for him, I don't know his wife, but have seen her.

John Graham—Being sworn said, I live at Kirkandrews. I have seen Clarke go back and forward to the Infirmary, and I often asked him how he was several times. He told me he was much better, but far from well. He was generally in a cart. This was while he was an out-patient. I never saw him while in the Infirmary. I have seen him since he left the Infirmary. He said he was a good deal easier. I have nothing more to say.

The Rev. Robert Robinson—I am minister of this parish. I received the paper which I produce from the clerk. I read it in church, It was for his being relieved. He came to church once or twice afterwards. He told me he had been relieved in the infirmary.

The Coroner read the document—"James Clarke having lately received great mercies from Almighty God, by being relieved in the Cumberland infirmary, desire to return humble and hearty thanks for the same."

Thomas Hewson sworn—Said I am the parish clerk. I received the paper either from the deceased or his wife, but I cannot say which.

Thomas Elliott, being sworn, said—I live in Carlisle. I am a member of the Royal College of Surgeons, of London, and am in partnership with my brother. I attended the deceased on the 27th of April. I saw him in company with Dr. Jackson. I found him standing at the door leaning on two sticks. He walked into the house with great difficulty, in fact, hobbled in. We asked what was ailing him, and he said he had rheumatism of the left leg and thigh. We then asked him if he had ever been under the hands of any one else; when he stated that he went to the Cumberland Infirmary some weeks before last Christmas. That he was received there by Mr. Page the surgeon, who examined him,—told him he had rheumatism, and put a blister on his knee. He said that Mr. Page then told him that he must be treated by Dr. Barnes, and that from that time he was treated by Dr. Barnes; that he had a blister again put upon his knee by Dr. Barnes. He had also a blister put upon his hip; and he had some white ointment given to rub his thigh and leg, which brought out large pimples; that he took some medicine which made his mouth sore; and that he had some medicine given him to take inwardly—that he thought was turpentine and water. We asked him if it pained him to stand or walk upon his left leg. He said it did very much. We asked him if that was the case when he went to the infirmary; if he had been made to rest his leg or allowed to walk about? He stated that he was told to walk about, and that on one occasion Dr. Barnes had taken a stick from him, and asked him to try to walk without it, and why he did not lean more weight upon that leg. We asked him if no stronger means had been used than the application of a blister. He said no. We then desired him to get into bed for the purpose of examining his leg. He stated also, that before that his complaint was always called rheumatism, and that on the board above his bed-head the word "rheumatism" was written. When he was in bed we examined his limb, and found the left limb 1½ inch shorter than the other. There was a large collection of fluid in the groin, and extending over the upper part of the thigh, and one-third down the thigh. The swelling was extremely tense, or tight, with a slight redness of the skin; and one part was what is called poiting, that is, coming to the surface. It was a collection of matter making its way to the surface. The skin was about to break. There was no swelling about the knee itself, although he complained of a severe rheumatic pain there. I fixed his thigh, while Dr. Jackson took hold of his leg, and moved the knee-joint alone, and there was no increase of pain in doing so, in that joint. I then took hold of the thigh and pressed against the body, which made him call out from the increased pain of the knee, as well as of the hip-joint itself. We then told him at once that it was not rheumatism, on either hip or knee, or the limb itself, but "morbus coxarius," or disease of the hip-joint which he was labouring under. We told him that it would be advisable to make a small opening on the upper and outer part of the thigh, when it was likely to burst through, in order to prevent its spreading further down the thigh; and make the orifice as small as possible, from which the matter would flow. We told him his limb must be kept perfectly at rest, that it was absolutely necessary in every stage of "morbus coxarius"—that without it, no other remedies could prove of any service, as affecting the disease itself. We gave him directiors about getting a splint made to keep the limb quite immoveable, and stated that we would return in the course of three or four days and insert an issue, or seton, on his groin. We did so, merely for the purpose of relieving the pain. In reply to his wife's enquiries, we stated that there were no hopes of his recovering. We stated the same to Mr. Gilkerson, who was present when we saw him for the first time, and at whose request Dr. Jack-

son went. This was the first day we saw him· We could only hope to relieve his sufferings. In reply to her enquiries, we also stated, that if the disease had been properly treated in its earlier stages—before matter was formed, in all probability the result would have been different, as the treatment of the disease in early stages was generally successful in most cases. After that we saw the deceased occasionally. He was unable to bear the splint, and from the rest and the seton the pain became much relieved,—so much so, that the last time we saw him, he did not complain of any pain when at rest. The next thing I heard of was the man's death. I saw him a week or ten days before his death. He sank under the effects of the disease of the hip-joint,

By Mr. Nanson—I believe the patient was also seen occasionally by Mr. Hodgson, also by Dr. James, and by Mr. Sewell, of Burgh; but by no other medical men that I know of. I had not seen the patient before the 27th April that I am aware of. I have attended many cases of diseases of the hip-joint, but never one of precisely the same circumstances; all the cases in which I had the treatment in the incipient state of the disease were successful. I saw them in the incipient stage and was successful in all, I have been called in cases in a later stage when I could do no good, but I connot say how many, it may be ten or a dozen; this was when the disease had commenced in the patients as children, and the parties were unwilling to submit to the remedies, as a disease had existed so long. I never saw a case of a disease of the hip in an advanced stage in an adult, except where it had commenced in childhood. Clarke stated his case had not commenced in childhood—from his d escription I should say in Clarke's instance the disease had existed for more than twelve months· I never adopted the means of making an opening of the swelling in any other case. I did so on authority, having never met with a case of the kind before; in this case I gave no hope of recovery to the wife beyond the relief of pain. I told the man we must always hope for the best, because, poor fellow, he was just about dying. I suggested the expediency of an inquest in this case, in consequence of what took place at the meeting at the Town Hall, I did so with Dr. Jackson, in consequence of what Dr. Barnes was reported to have said in both the *Carlisle Journal* and the *Patriot*. I cannot say whether Dr. Jackson suggested it to me; it was suggested by a gentleman before the man's death. I decline to give his name as the Coroner tells me I am not obliged to answer that question. I also decline to answer the question what other medical men I consulted, as the Coroner thinks I am not bound to do so.

The Coroner thought it was not necessary to the inquiry that the party should be named.

Examination resumed by Mr. Nanson—I had heard of Clarke's case before I saw with Mr. Gilkerson; it had been mentioned to Dr. Jackson many weeks before. He said he had not been attended by any medical man after leaving the infirmary until we went to him,

By Mr. Steel—In my cross-examination to Mr. Nanson, I said Clarke had complained of rheumatism a few years, but he had his regular complaint for more than a year—since the latter end of last harvest. My reason for calling for an inquest was the report of what had been said by Dr. Barnes at the public meeting. I consider that the condition in which I found Clarke entitled me to call for an inquest. I conceive that if he had been properly treated for a length of time, in the first stages of the disease as an in-patient, the great probability is that he would have recovered. I have heard the statement of the medical officers of the infirmary as to the state of Clarke when he first applied there, and I think if perfect rest had been enjoined with other remedies he probably would have recovered; they do in a majority of cases. I heard that his disease was rheumatism, and *morbus coxarius*. It was most decidedly not proper treatment to allow a man so afflicted to travel in a cart, and to apply no other remedy than a blister to his knee and hip without no more active remedies than described by the infirmary officers; as a medical man I say that treatment was most decidedly improper; beyond my own statement I have authority for saying so.

Mr. Nanson asked if they were to go into these authorities?

The Coroner thought it ought to go to a jury.

Mr. Elliot was then allowed to read at considerable length extracts from several medical works, expressive of an opinion that preserving the joint in complete rest was the only means, with other treatment, by which disease of the hip joint could be cured.

Mr Nanson, while these extracts were being read, constantly objected to the course pursued, and both he and Dr. Barnes frequently said that the cases set forth in the books, and to which Mr. Elliott referred, did not correspond with the case of Clarke as described in the evidence, but the Coroner still allowed the extracts to be read.

Mr. Nanson, in several objections, urged that the opinions of medical men, however eminent, could not be evidence on a case they had not seen —that they could not even get at the general opinion of the authors by reading small extracts from their works—the whole of which ought to be read if part of them were—a proceeding to which there would be no end. That the only way to get at legal evidence in such a case was by the examination of medical men, and that as the diseases referred to differed materially from the case of Clarke, the reading the extracts was calculated to mislead the jury.

The Coroner said he thought they had as great a right to read medical authorities as law authorities, which was allowed in courts of law.

Mr. Nanson—No. Text writers are never admitted as evidence, and the law of the land is strictly laid down as binding, which the opinion of medical writers certainly is not.

The Coroner thought the evidence ought to be admitted, as there was no doubt the complaints were the same.

Mr. Nanson—Well, I don't wish to reply upon the Coroner; but the complaint of Clarke has been distinctly stated to have been rheumatism and general debility, as well as a disease of the hip-joint—and he submitted again these affections were not referred to in the extracts, therefore that extracts so inapplicable were calculated to mislead the jury.

The Coroner still permitted Mr. Elliot to continue reading, and when he had finished

Dr. Barnes begged to be allowed to say the books from which extracts had been read for the most part treated of quite a different complaint to what the patient had.

Cross-examined by Steel—If I was called in to treat a case of *morbus coxarius*, I should treat it according to the principles laid down in the works I have read; I should not think myself justified in any other way. I consider *morbus coxarius* a case for a surgeon, it is only treated of in surgical works; I have no doubt Clarke was labouring under that disease when he saw him first; from my experience as a surgeon I don't think it possible the disease could have commenced and gone on to that state before the early part of January. That is my opinion as a surgeon. *Morbus coxarius* is a hip joint disease—consists essentially of an inflammation in the different tissues or parts of the joint—the lining membrane, the cartilage, and the bone—secondly of the gristle covering the head of the thigh bone and lining the socket; of an inflammation of the bones that enter into the formation of the joint; I mean the bones forming the socket, the disease may affect one or all of these parts at the same time; that constitutes *morbus coxarius*—may go on to ulceration and destruction of the socket; the stiffening of the ligaments has no connexion with *morbus coxarius*. When the disease passes on to the last stages all parts become involved, but *morbus coxarius* has nothing to do with the ligaments; at its earliest stages in any of these former I would treat it with perfect rest, and then by cupping or leeching, applications of seaton or red hot iron, as might be required—by the application of splints to keep the limbs quiet, bandages soaked in starch, and other numberless applications.

Dr. Jackson, gave similar evidence.

By Mr. Nanson—I approved of this inquest being called; I won't say what gentlemen ordered it. The Coroner has already said it is improper and impertinent. I am not a Member of the College of Surgeons. I expect I have a degree from some University. I have a degree of M.D. from the Edinburgh College, Doctor of Medicine; I was requested by the Coroner to attend and I considered it my duty; I am not able to tell you what other medical gentlemen concurred in the inquest, let then speak for themselves; Mr. Elliot himself, gave notice to the Coroner to hold this inquest; We considered it a fit course; As a medical man, I consider it important to see a patient, as well as judge of his case from another medical man however skilful; I never saw Clarke before the 27th April, and then it was unfortunately too late; I should have seen him six months sooner, it is possible if I saw him twelve months before, he might not have died. A mere tyro in medicino is competent to treat disease of the hip-joint. I have no books to read, you can't understand them it appears.

By Mr. Steel—I agree in Mr Elliot's definition of the disease morbus coxarius, and I have no doubt Clarke had the disease when he first applied to the infirmary. He must have been afflicted with it when he went there first. I ground that opinion on the condition in which I found him on the 27th April, and on the history of the case given by himself; if he had not the disease when at the infirmary it were impossible matter could have formed so soon, it is scarcely possible. I mean the dislocation of the hip, and the other appearance could scarcely have been there. I was called in by Mr. Gilkerson, of this village, who desired me to come and see him, as he was no better. There seemed to me a mystery about the case. He had returned thanks for being relieved in the Cumberland Infirmary, and he thought it improper. I was not a volunteer in the matter.

By Mr. Nanson—I never heard of the man having a fall after he left the infirmary. It being in evidence that the man could walk better, and was considerably better. I should say his betterness was only apparent.

Mr. John Hodgson being sworn said—I am a surgeon residing in Carlisle. I examined the deceased first on Easter Sunday so as to hear anything of his case. He came hobbling up and called after me as he came from church in this village. I stopped to him, he said he was very ill and very lame, that he had been under the doctors of the infirmary for a long time, but they had done him no good, that he was now getting rapidly worse, and that he would be very much obliged to me and some of my medical friends if we could do anything for him. I asked him what his complaint was, he said that they told him it was rheumatism, that they had blistered and rubbed ointment upon his thigh, and none of those means had been of any use; he walked very lame and complained of great pain in his hip down the thigh, and in the knee, I told him I was afraid there was something worse than rheumatism, and that I would come or send some of my friends over to examine him thoroughly. I mentioned the case to Dr. Jackson, I suggested to him to go and see the man, I offered to go with him, but it never suited my convenience to go. I next saw him in the beginning of May, and then examined his condition; he was lying in bed and there was a large abscess discharging from the front of the thigh, the limb was shortened about an inch and a half, there was great pain on the slightest motion, he could not bear the limb to be moved in the least, there was matter spreading down the thigh, so that when the lower part was pressed the matter came running out of the opening at the interior and upper part of the thigh; he could not bear any motion of the hip part all, the slightest movement of the bone produced excruciating pain, and he called out; the thigh bone was dislocated, the head of the bone had left its cavity, and he was in the last stage of the disease call morbus coxarius, that was the state in which I found him. I saw him four or five times after that at different intervals.

By Mr. Nanson—I never heard of the deceased having had a fall, I don't know the diet which was prescribed by the medical men who treated him last.

Mr. Elliot said that the diet was to be nourishing but not stimulating, to be beef tea, but no spirits.

Mr. Hodgson, by Mr. Steel.—I agree with Dr. Jackson and Mr. Elliot in their description of the disease under which the man laboured, when I saw him I should imagine he must have been labouring under the disease more than twelve months, from the state he was in and the description of his ailments that he gave to me. The disease could not have reached that stage if he had not been labouring under it when he left the infirmary; it could not have commenced after the 11th Jan. and gone on so rapidly to a fatal termination as when I saw him in a man at his time of life, my experience of the malady is entirely against such a supposition. I have seen several cases of that disease, and have treated a few myself in the earlier stages; I have seen a few in the last stages under the care of others, the disease usually takes a long time to run its course, several months, and sometimes longer; I never knew it run its course in four months, I consider it not absolutely impossible, in every stage of the disease from its earliest period to its termination, I would not consider blistering and cupping to be sufficient without rest; from what I know of the case, and what I have heard from the medical men, it is certainly my opinion that he must have been labouring under that disease from the first time he went to the infirmary. I certainly don't think it possible to cure the disease by the means adopted in the infirmary, if this man was allowed to go about; I now speak of the adult.

By Mr. Nanson—I did not say there was matter formed before he left the infirmary, there was matter formed when I saw him, but I think it scarcely was formed before he left the infirmary. After the formation of matter, the disease is incurable in the adult. It appears before he went into the infirmary he was unable to walk without pain; if he laid his foot against a stone it would cause pain. These are symptoms of the incipient stage; there was also pain in the knee, which was a common symptom of the disease in an incipient state, which was often mistaken by careless practitioners as the seat of the disease; these are all symptoms of the earlier stages of *morbus coxarius.* I consider it a disease that has no connection with rheumatism, although they may be met with in the same subject; the feeling of change of weather is common to both diseases.

By Mr. Steel—The treatment of the doctors in the infirmary could not possibly cure; the consequence of not treating this important stage is, it gradually progresses to the destruction of the joint, the cartilages become ulcerated, the bones carious, that is diseased; a carious bone is merely a decayed bone, then matter is formed, this harrows and destroys the capsula lihament which encloses and binds the joint to the cup; the matter makes its way out of the joint, and travels through the muscles of the limb, and works its way to the surface and points, as it appears to have done in this case; the head of the bone got out of the cavity, and is drawn upwards to the bone of the *pelvis*, or bone of the body, and hence the shortening of the limb. It is possible the disease may end in a stiff joint, but it is scarcely possible in an adult.

Dr. James, being sworn, said—I am a Doctor of Medicine. I saw the deceased on the 2d of Aug. In consequence of report of meeting of infirmary, that appeared in the Carlisle papers, I came over to see him, in company with Mr. Hodgson; having been frequently requested to do so, both by Dr. Jackson and Mr. Elliot. I found him lying in bed, very much debilitated, and evidently sinking under his disease. There was considerable swelling of both legs, especially the left one. He gave me the history of his complaint; complained much in the same way as described by Mr. Hodgson. The man was sinking under the disease from which he was labouring; it was morbus coxarius in its last stage. I asked him for what complaint he had been treated; he said, rheumatism. I repeated the question several times, and he always said, rheumatism: he was not, to his knowledge treated for any other complaints. The reason I asked so frequently was, that Dr. Barnes stated he was not treated for rheumatism, but disease of the hip-joint. He told me the remedies applied in the infirmary, and what Dr. Jackson and Mr. Elliot had done for him; and the man was in a dying state.

By Mr. Nanson—I approve of what Dr. Jackson and Mr. Elliot had done. I understand he had frequent attacks of rheumatism, but that since harvest he had been afflicted with what he called rheumatism, but that he had been a healthy and very hard-working man. I did not hear of his having had any fall after he left the infirmary. I only saw him once.

By Mr. Steel—I did not coincide with Dr. Jackson, and the other medical men, in calling the inquest. Dr. James complained that he or others should be assumed to have acted from prejudice: he added, I had nothing to do with the getting up of the inquest. Clarke told me he was sometimes better, and sometimes worse, but he evidently referred to his pain. I have heard of the treatment he had received in the infirmary. I do not, most assuredly, think that he would have recovered under it; the disease would get gradually worse under such treatment. I have heard that he was an out and an in-patient before the month of January. I think the patient had been labouring under the disease the whole of the time he had been in the infirmary, and for some time previously. I said I approved of the treatment applied by Dr. Jackson and Mr. Elliot; it was only palliative; the man was past the chance of recovery —I have no doubt he was so when the issue was put in, from the history of the case. I concur with Mr. Elliot, Dr. Jackson, and Mr. Hodgson, in the treatment they recommended. It is adopted by all regularly-approved practitioners. Sometimes they fall into the hands of quacks, and I don't know how they treat them—such as, Dr. Potter, of Manchester, old Stock, of Burnley, and others. I think there was a fair and reasonable chance of his recovery, under what I call proper treatment, at the time he entered the infirmary: that opportunity having been lost, I agree in the description of Mr. Hodgson, as to the progress of the disease to its fatal termination: it is exactly correct.

Dr. Lonsdale being sworn, said—I reside in Edinburgh. I am a lecturer on anatomy and physiology, in the medical school, and fellow of the Royal College of Physicians of Edinburgh.

By Mr. Steel—I have heard all the evidence in this case; I can form an opinion that the cause of death was morbus coxarius, the term is understood by all the surgical authorities to consist in some inflammatory action of the delicate membrane called the synovial membrane, which covers the head of the thigh-bone and lines the socket or cup-shaved cavity in which the head of the thigh-bone moves, or ulceration of the cartilages, or grisly strictures, which enter into the formation of the joint, or in diseases of the bones themselves—all of which structures fall into the formation of the joint, that is morbus coxarius. I heard that he was a patient of the Cumberland Infirmary, and the state he was in. There was every probability he was then labouring under the disease. I have scarcely a doubt upon the subject. I come to that conclusion from the evidence. I have heard both the medical and non-medical evidence; he had every chance of recovery under proper treatment; I have heard what was the treatment adopted; in my opinion it was certainly not possible for him to recover under that treatment. I ground that opinion upon the fact, that the first and most essential condition in the treatment of morbus coxarius is rest—perfect rest; in making this statement I am borne out by the opinion of all surgical writers, and the practice is universally pursued by the profession—I mean the well educated members of the profession. I need not remind you that he was carried three or four miles in a cart— the very opposite to rest, and as an in-patient he was permitted to walk out of his ward; as the disease is curable at this its first stage, I glean from the evidence that the disease was limited to the first stage when he was an in-patient; the remaining part of the treatment in such cases would be useless, unless the first, rest, had been strictly enjoined; after rest, the general health was to be attended to, and counter-irritation at the infirmary was not sufficiently active: with the treatment adopted in the infirmary, cure was quite impossible; with proper treatment, and counter-irritants, it was probable he would have recovered; it was no use treating for rheumatism while *morbus coxarius* existed, as it was the most dangerous disease, but the treatment adopted for that would have been the very best for rheumatism. At the period when Dr. Jackson and Mr. Elliot saw the patient, he could not recover. The treatment they adopted was proper as a palliative. I am not aware of any treatment whatever that could then have saved him. It is extremely improbable. The state in which they found him could not have been produced between the 11th of Jan. and the 27th April: proper treatment having been omitted in the incipient stage, it was not absolutely necessary that the disease should terminate fatally, but it is very probable; the disease would go on to its second stage, or that of suppuration; when in an adult person, the chances of recovery are very small indeed. I can understand the patient feeling better when he left the infirmary, as patients, in afflictions of this kind often are two or three days freer from pain than at other times; and patients always consider that they are better when free from pain. I, as a medical man, would not consider such a patient relieved, although he did express himself free from pain for a day or two.

By Mr. Nanson—I practice both medicine and surgery; I took my degree as Doctor of Medicine, and became a member of the College of Surgeons in 1838, and have since practiced; I was out of my apprenticeship in 1836. Cold, and other causes, bring on this disease; it arises in what is called a scrofulous constitution; I am in practice in Edinburgh; I was desired to attend by the Coroner; I am staying in Carlisle at present; I never saw the deceased.

This closed the evidence.

The Coroner then said—After this long and tedious inquiry I shall detain you as short a time as possible; but the question affecting the death of James Clarke, involves a very important principle, and therefore, it is your duty, even at this late hour of the night, to give the case your most careful attention; you must lay aside all prejudice, and be influenced only by what you have heard in this case. It has been suggested, that this is a case over which I have no jurisdiction; but my opinion is, that I should have been liable to the penalty of neglect of duty, if I had not caused the enquiry to be made. The question for you to decide is, whether the death of James Clarke was either caused or accelerated by any of the medical men who attended him, but I will read you the law of the case. (Here the Coroner read an extract from some work.) If you are of opinion that the case was properly treated by every one who attended him, then his death was a natural death, and that will be your verdict. If you think there has been negligence or ignorance displayed, you will have to say to what extent. If you think that it was of so gross a character, that you may reasonably suppose that they were careless as to whether the man lived or died, that is murder. If a want of ordinary skill or care has been proved, then that is manslaughter; but if you think the practice adopted was incorrect, but yet, what might occur to any medical man, then he is not criminally guilty, however much he may be so in his own conscience, or in the estimation of the public. Gentlemen, the eyes of the world are upon you; it is a most important enquiry, and one that will, I expect, excite a good deal of remark in the world. I have prepared six questions, which it will be your duty to answer. The Coroner then proceeded to read the evidence.

The jury returned as their general verdict—

That the deceased, James Clarke, came to his Death by the Visitation of God, from Natural Causes.

The following are the questions submitted by he Coroner to the Jury, touching the death of James Clarke, with their answers:—

1st—What was the cause of his death?

Answer—A Disease of the Hip-Joint.

2nd—What was the particular disease, its name and situation?

Answer—The majority are of opinion, that the

Disease was Disease of the Hip-Joint, complicated with Rheumatism.

3rd—Was the treatment adopted during the time he was an out-patient, and afterwards as an in-patient, of the infirmary, correctly and attentively administered?

Answer—The majority have decided, that the deceased had been attended with due care and assiduity, and that the treatment was correct and carefully administered.

To the three other questions the jury gave no answer.

Foreign Body in the Air-Passages.—Mr. Wickens West, of Poole, narrates the case of a boy, thirteen years old, who laboured under febrile symptoms, with hard dry cough, a sense of uneasiness about the chest, general efflorescence, pulse 120, profuse night sweats, and an abundant expectoration of matter, so purulent as to emit a disagreeable fœtor; the cough was very troublesome, with considerable dyspnœa. The boy was treated for phthisis, when one day, after the lapse of several months, he was attacked with violent vomiting, and threw up a plum stone, after which he rapidly got well. M. West entitles this a case of foreign body in the air-passages, which from the symptoms he is fairly entitled to do; but, when describing the expulsion of the plum-stone, he says the boy recollected having swallowed it some little time prior to his being taken ill; it *stuck in the œsophagus*, and was attempted to be pushed down with a probang by a surgeon. The error thus made by Mr. West would have been prevented had the chest and larynx been carefully examined by the stethoscope.

Cases of Necrosis.—Dr. Laurie, of Glasgow, has detailed several cases of necrosis in our northern cotemporary, of which we shall give an abstract. The first is that of a boy, 13 years of age, in whom necrosis of the left superior maxillary bone took place, as a sequela of typhus fever. The bone was removed by Dr. Laurie entire, he having loosened it previously by repeatedly moving it with a pair of dressing forceps. When the soft parts had cicatrized, a large and unsightly gap remained, which, for a while, could not be remedied by an operation, as the lower jaw was fixed immoveably, in contact with the right upper one. Dr. Laurie believing this to depend on rigidity of the left masseter, introduced a narrow straight bistoury under the skin, and having carried the point as far back as the posterior fibres of the muscle, divided it from without inwards. Some advantage was gained by this, and, after awhile, the boy could open his mouth more than an inch, and had good lateral masticating action. A month afterwards, the edges of the gap in the cheek were made raw; a triangular portion of skin was cut out over the masseter, the basis being towards the mouth; the integument on all sides, but especially the lower, was freely detached, and the edges approximated and retained by the twisted and interrupted sutures, which was effected without much stretching; one vessel required a ligature. A fortnight afterwards, union was complete, and the deformity was so far remedied, that litttle more than an artificial palate was needed. In a similar case, which occurred several years previously, Dr. Laurie endeavoured to fill up the gap by a portion of integument taken from the back part of the fore-arm, but the impossibility of keeping the limb properly fixed, caused the failing of the operation. The next case recorded by the Doctor is one of necrosis of the shaft of the left tibia, following periostitis. Amputation was performed, and the boy was ultimately dismissed cured. On examining the limb afterwards, the bony case of the shaft of the bone, from epiphysis to epiphysis, was found to be quite dead; the epiphysis at the knee and ancle had sent out processes on the posterior and external aspects of the bone, about three inches and a half in length, which, though still two inches apart, were obviously rapidly approaching each other. The cancellated structure was obviously alive in the neighbourhood of each epiphysis, and extended into the dead case of the bone, which was drilled at one or two points, through which openings vessels seemed to pass from the living cancelli to the surface of the periosteum, on which they appeared to deposit osseous matter. The periosteum was separated all around, from the dead shaft, and with the exception of the deposits mentioned, there was not any appearance of formation of bone, either on its surface, or on that of the dead bone. From these appearances, Dr. Laurie was led to believe, that the removal of the dead bone might be safely and advantageously substituted for amputation in such cases, and which he accordingly practised in the next case that presented itself—one of necrosis of the tibia, occurring as a consequence of extensive periostitis following a sprain. The portions of bone removed were seven inches and three quarters in length, and included the entire thickness of the bone. The entire bone was afterwards regenerated, though how soon after the operation, Dr. Laurie cannot say. In the next and last case, one of necrosis of the left humerus, from a compound fracture, the dead bone was extracted through the original wound, and the little patient, a girl 6 years old, was dismissed cured. The piece of bone extracted was about five inches long, and apparently consisted of the whole of the humerus without the epiphysis; the under part consisted of the cylinder of the bone entire; the upper was drilled by several large irregular openings.

Dr. Laurie answers the question, how soon may the dead bone be removed by operation? by saying, as soon as the inflammatory stage has passed, suppuration been fairly established, and the constitutional symptoms will permit. The nature of the operation to be performed must depend on the extent of the disease. When the entire thickness is involved, the necrosed part should be exposed, a portion cut out, and occasional attempts made to extract the portions connected with the epiphyses. There is little risk in hurrying them away too soon, provided violence is not used in the attempt; they will become loose when the natural process of separation is complete, and then comparatively little force will be required for their extraction. When the surface of a bone only is exposed and necrosed, it seldom happens that the dead part is encased in a new bone. It generally scales off, and finds its way through the ulcer, in the soft part, or through an abscess. Should the dead portion be extensive, and the position of the bone admit of it, it would save time to lay open the sinuses, expose the bone, and remove with a sharp chisel all the dead portion.

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Residence of Students.—A limited number of students may be accommodated with rooms in the College, and some of the professors receive students into their houses.

Any further information may be obtained upon application to the Dean of the Medical Department, or to the Secretary at the College.
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30	1 6 4	1 12 2	1 19 1	2 7 4	2 17 6
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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 208. Vol. VIII. LONDON, SATURDAY, SEPT. 16, 1843. PRICE FOURPENCE. Stamped Edition 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per half-year, Post free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE XIII.

3. *Substances Protective of Digestion.*—Every organised being lives in the midst of dangers, which are every instant menacing its existence, and of enemies who are seeking to live at its expense. There is not a species which is not inimical to others, and which has not, in its turn, enemies to its own existence. Our life is a continual combat, in which we are successively conquerors and conquered, executioners and victims, frequently unjust, but more commonly oppressed; and all our intelligence, all our arts, and all our activity, have no other object but to dispute, with that which surrounds us, this frail existence, which is threatened at every step. Sometimes this war is with the elements; at others with the temperature, which is too hot or too cold; with the tempest, which crushes us beneath its force, or consumes us as a piece of chaff; with the monsters of the deep, which surprise us on the waters; with the beasts of the forest, which prowl about our dwellings; with the insect, so small that it might be crushed beneath the nail, but so powerful in its invisible labor, which works our blood into a state of fever, and consumes us with an intolerable itching; lastly, with our own irregularities, our excesses, and our own suicidal acts.

Hygiene, however, steps in to protect our digestion, against the irregularities of our regimen. This hygiene which, in animals, is an instinct, is, with civilized man, raised to an art and a science. Pharmacy and medicine are but two modes of bringing us back to that state of nature, from which we had strayed. The culinary art may also be ranked among the protective sciences; it may be defined as the art of seasoning our food, with condiments, and thus assisting digestion. The culinary art has remained at the same point which it, along with medicine, occupied under the Romans. Medicine has passed among the liberal sciences; but the culinary art has remained within the province of slaves. The pharmaceutist is raised to the title of Academician, and Baron of the empire; the cook is still no more than a valet. Whence, then, this difference? The one compounds dishes which should be delicious and acceptable to the palate; the other, in mixing his drugs, has merely to guard against poisoning the patient. What science is there required to become a pharmaceutist? The only essential knowledge is that of the list of official drugs. But the book of cookery requires an equal degree of application. The cook must have more practice, as well as tact, than the drug-compounder, to enable him to mix his substances; for how is he to judge, except by the taste, the exact point at which the mixture ceases to be agreeable, and becomes offensive to the palate? If cookery had had its Hippocrates, its Celsus, and others, if it had required a knowledge of Greek and of Latin, the cook, having become learned by the accessory sciences, and pedantic by profession, would have occupied an equal rank with the pharmaceutist, who now rules over him; and we should probably have had a fifth faculty established in our universities, before which we should have had to sustain our theses, *de præstantia culinariæ.* The nobleness of professions, as all other nobility, depends only on an elegance of manners, on the artifices of fine language, and on the privilege of a certain degree of idleness.

The culinary art is the knowledge of combining the saccharifiable with the saccharifiant principle, so as to favour the progress of the stomachic fermentation, to awaken and to sustain the appetite by a happy succession of refinements, and to protect the digestion, by the choice of agreeable condiments. It consists of combinations, in which the sweet principle disguises the bitter principle, which is its antidote, and in a succession of courses which mutually prepare for, and correct one another; thus producing, from the variety of dishes, relief, as well as pleasure; arousing the appetite when deficient; assisting the digestion when feeble; and so arranging the economy of the table, that there shall be sufficient for every body, but excess for none. A clever cook is the Esculapius of digestion, and his loss is frequently a domestic calamity. Condiments are seasonings, which protect the digestion against itself: such is the theorem in its general expression. We shall give the demonstration of this by-and-by. We will, however, here remark, that hygiene and medicine have recently advanced boldly on a new route, which is in reality but a revival of the ancient one; and that pepper, ginger, cannella, garlick, and the whole host of condiments, which had been proscribed as inflammatory by Rasori and Broussais, have lately resumed their original importance in the culinary art. I have rarely failed in curing chronic gastritis, by the exhibition of highly spiced food, and ordering the patient carefully to abstain from all insipid and mild substances. Numerous physicians have already given in to this opinion, and adopted its practice; the bad success of the opposite plan will in time convince others of its propriety.

We shall divide condiments into two classes, which require different vehicles; 1°. salts, such as sea-salt, which has been improperly called the poor man's sugar: for, if the rich man studied his health, he would consume as much of this sugar as the poor man; nitrate of potash, in certain dishes, and in a small quantity; bicarbonate of soda, in certain cases, &c.; 2°. the essential oils which are condiments properly so called: butter, oil, vinegar, the alcoholic portion of wine, are the most common vehicles of the essential oils, and which are most frequently employed in the culinary art; whether hot as in *ragouts*, or cold as in salads. The more general condiments, are pepper, ginger, cloves, nutmegs; orange and lemon peel, or rather their juices; the buds of the caper plant; the young fruit of the cucumber (girkins) which are preserved with vinegar; parsley, chervil, garlic, shallots, onions, &c., the juice of which may be extracted, in twenty different ways, but always by means of an oily substance or by vinegar. The necessity for highly spiced food is so much more felt, the nearer we approach to the equator. The betel, the pimenta, &c., in excessive doses, are the habitual condiment of the inhabitants of the torrid zone. A mild regimen, as milk, &c. which would be a poison in the Indies, is, on the contrary, the customary diet of the Samoid, and of the Laplander. Every animal, like man, has its condiment; it becomes ill, when deprived of it. The dog and the cat, every morning, take a certain quantity of the green stalk of the dog's grass, which is their ordinary condiment. How many beasts become ill, when deprived of hay, that compound of a thousand different species of balms, at the head of which we must rank the stalk of the gramineæ, which is so rich in benzoin. Fish are so greedy of condiments, that they may be caught much more quickly, by dipping the bait in the juice of the house-leek, garlic, musk, amber, camphor, &c.; so also, people may catch them with the hand, by rubbing the fingers with these substances. Annibal Camoux, who was born at Nice, on the 20th of May, 1638, the same year as Louis XIV., and who died at Marseilles on the 11th of August, 1759, at the age of 121 years and 3 months, attributed his long life to the *angelica root*, which he habitually chewed. The labouring man and the habitual smoker have their condiment, in the tobacco, which the one chews and the other smokes; provided, however they do not join to it, the disastrous abuse of alcoholic liquors. To withdraw suddenly the employment of this substance is a fatal blow to them. How many patients have died in the hospitals, from having been placed on a strict regimen and deprived of their habitual condiment. Sea-salt, which is a condiment on land, is an occasional cause of scurvy at sea. The condiment of the sailor, is pure river-water, and salad fresh from the stream. We shall give an explanation of these phenomena at a subsequent period.

THIRD KIND.

Thermal causes of disease.—The physiological combination of the element of water, of air and of earth, forms a vesicle, which is endowed with a faculty of elaboration, constituting life, and with a faculty of indefinite reproduction, which we call development; this combination would be impossible, without the concurrence of a certain temperature. We may obtain a negative demonstration of this theorem, by bearing in mind that bodies never combine together in a solid state: water loses its faculties of solution, and consequently its organisation, immediately that it is converted into ice; the organised cell cannot carry on its functions at the temperature of zero; vegetation is impossible upon the glaciers of our mountains, as well as near the poles.

Heat, without which organisation is impossible, is not a sensible body; it is an element—an imponderable element, spread through all space; subtle as gas, but appreciable like it; which may, like it, be isolated and neutralised, by double decompositions, and by varied combinations; or rather, an element without which no other combination can take place; which is the centre of every movement, the bond of all affinities, and of all attractions; as light, electricity, magnetism, according to the organs and the instruments which are employed to receive it, heat envelopes all atoms, and all worlds; it associates them by attracting them, one around the other; it subsequently separates them, by drawing them in an opposite direction, in conformity with the grand law of equilibrium, which tends towards uniformity and repose; a constant tendency which, acting in an infinite medium, must necessarily produce and reproduce, without intermission, a perpetual movement, the most harmonious result of which is shown in the revolutions. Heat forms then the fourth organising element of the organic vesicle. If you subtract the heat from this vesicle, you will disorganise it, for you destroy from that moment the chemical combination in which its vital principle resides; and this combination is in definite proportions, as every other chemical combination. Now, as elementary analysis shows us the organised vesicle, reduced to its primitive condition, and composed of about equal parts of water and carbon, associated together with an earthy base, and in a progression which follows that of the age of the individual; so does physiological analysis show us this vesicle, necessarily combined with a certain quantity of caloric, for the preservation of the equilibrium of which, it is necessary that the surround-

ing air shall not exceed 30 deg. of the thermometer (cent), nor sink below about 10 deg.; at least the deviation from these points should be but slight and transient. At a temperature of 10 deg., the elementary atoms of the cell are drawn close together, in consequence of the subtraction of the caloric which kept them at a suitable distance; the liquids tend to become solids; and the circulation, that current which conveys nutrition to all parts, becomes slothful, irregular, and faltering, until finally suspended. Above 30 deg. the caloric, enveloping the atoms with a new layer, holds them at a distance, one from another, and thus destroys the vascular unity, by confounding the elements with what is foreign to them. Below 10 deg. the vesicle contracts upon itself, it is benumbed; above 30 deg. it evaporates. Hibernation lies towards the bottom of this scale; combustion towards its summit. In the one case, we have an eternal sleep; in the other, death, or rather a new resurrection; for the atoms do not die; they recombine into other forms.

Between these *minimum* and *maximum* limits, the organised vesicle does not elaborate in an uniform manner; it is evident, on the contrary, and forms as it were a corollary to the foregoing principle, that the energy of its elaboration diminishes in proportion as we descend, and augments as we mount up this scale. Uniformity can only be maintained at an equal distance from the two extremes. This is the temperate zone of the organisation. Have we, then, the power of ascertaining the sum of caloric, of which each organised cell, in its most simple form, has need, for its special elaboration,—the proportion, in fine, in which caloric enters into the vesicular combination? We may, perhaps, one day be able to represent this in its just proportions; but, hitherto, in consequence of the imperfection and grossness of our instruments, and especially by reason of the confusion, with which the phenomena of heat and of light have been surrounded, the results which have been obtained, have been either contradictory in themselves, or so irregular, as to lead to a mere absurdity. The heat which a living body disengages has been attempted to be estimated by means of the thermometer; but some people have confounded this quantity of caloric with that which the body possesses. Almost as if one were to say, *à priori*, the quantity of caloric which a body loses, is equal to that which it possesses. Thus, when it has been found that such a part of the body causes the mercury in the thermometer to rise to 29° (cent.), it has been said: the heat of such a part is raised to 29°; and this is the manner in which the tables of *animal heat* have been constructed. By pointing out this vice of reasoning, we necessarily reverse the whole series of experiments on this subject. They must all be recommenced, and upon entirely new bases.

Thermometrical experiments have, hitherto, shown us but the quantity of caloric disengaged by the elaboration of a body, but by no means the quantity of caloric absorbed by this body. Vegetables, even those which are developed only in the highest temperature of our atmosphere, do not disengage any proportion of caloric which is appreciable to our instruments; still it is certain that they absorb a considerable quantity of it. The same may be said with regard to *cold-blooded* animals, as compared to animals with hot blood. It is probable that cold-blooded animals absorb more caloric than those with hot blood; for a body which seems cold to us, is one which absorbs caloric, and which consequently combines with it; a body, which to us appears hot, is one which gives us caloric, and which consequently loses it, or becomes deprived of it. On the other hand, however, it is true that many combinations set free caloric at the moment in which their formation takes place. In fact, their molecules can only become more intimately drawn together, by giving up a fraction of the layer of caloric which held them at a distance. The activity and constancy of the disengagement of caloric, may then be signs of the activity and constancy of one of these species of combinations. As a general axiom, every gaseous mixture which combines into a liquid, disengages caloric, and causes a rise in the thermometer. Every solid body, which is dissolved into the form of a liquid, absorbs caloric and causes the thermometer to fall. The atoms of the gaseous mixture are drawn closer together, so as to combine one with another; and that which held them at a distance is ejected outwards—that is to say, the ethereal layer, or caloric which enveloped each of these atoms in isolated spheres. The solid body, on the contrary, and which has become such only by the proportional approximation of its atoms, re-absorbs, so as to enable the atoms to be maintained at the distance which constitutes a liquid, the caloric of which each of them was deprived, before arriving at solidity. But if we attempt to estimate the quantity of heat disengaged or absorbed, without taking into account the surrounding medium, we shall fall into the most contradictory errors. Observe the temperature of a man in the air, by placing a thermometer beneath the arm-pit, and you will find it from 29 to 30 degs. cent. in our climate. But if you repeat the same experiment in a cold bath, you will then find the temperature no higher than that of cold water; by passing into the bath, the man becomes, in this point of view, a cold-blooded animal. Now, the difference of age, of habit, of moral constitution, of mode of living, of clothing, &c., will, to a certain extent, produce these differences of thermometrical heat. The thermometer will also vary according to the part of the body to which the bulb is applied.

Every vegetable sleeps or hibernates so long as the depression of temperature lasts which distinguishes the cold season; still there are herbs so sheltered in certain positions of the earth along which they creep, that they regain their movement and life with the first ray of the sun. Among the terrestrial animals, very few hibernate, and even those hide themselves in the bowels of the earth, or in holes in the rocks; none of them could hibernate upon the ground and exposed to the air. Some other animals live with impunity in an icy atmosphere; in the first place, because they dwell there but for a short time, and because the motion to which they habituate themselves unceasingly disengages a temperature which is maintained around their bodies, by their coats or furs, which are bad conductors of caloric; and, secondly, because they return, from time to time, and revive themselves in the medium of a constant temperature. Without the aid of any foreign medium, the animal can, by means of an especial outward covering, maintain around its body all the heat which it disengages, and which thus forms an atmosphere favourable to its incessant elaboration.

It has been received as an established fact that the centre or focus of animal heat resides in the pulmonary elaboration. This is but a false conclusion. Undoubtedly, the pulmonary elaboration disengages caloric, since through its medium the gases of the atmosphere are transformed into liquids, and combine themselves with the blood. But the same phenomenon takes place upon all our surfaces; for there is not one of these surfaces which is not permeable to the external air, nor is there one of the elementary cells of our body, which does not absorb and elaborate the atmospheric gases. Every elementary cell then disengages caloric, and absorbs it by turns. Observe, moreover, what passes in every case, where some abnormal or extraordinary elaboration takes place upon the surface of any of our organs, however remote such organ may be from the anatomical position of the lung: a burning and painful swelling is quickly formed at the spot of this irregular elaboration.. Preserve this point from the contact of the external air, by covering it over with oil; and you will allay the pain which accompanies it, at the same time that you diminish the temperature of the swelling; you have, in fact, asphyxiated to a certain extent this abnormal branchial or respiratory organ. Every part then which carries on its proper function, disengages heat; the one act is the necessary consequence of the other; the stomach disengages it while digesting; the intestines while defecating; the heart, the arteries, the veins, and the capillaries, while absorbing the blood, and giving to it its circulatory movement; the liver while elaborating the bile, and the brain while elaborating the thought. Every accident which gives, in an organ, access to a larger quantity of air, induces a more considerable disengagement of caloric; such accident increases, in fact, the energy of the elaboration, by furnishing to it materials in greater abundance. A solution of continuity quickly produces inflammation. Now what is the mechanism in this case; the solution of continuity places a larger surface of any given vesicle in contact with the external air. The external air, which previously arrived at it through the medium of the adjacent cells, is suddenly brought into immediate contact with this vesicle. The cell absorbs and elaborates it, for its organic property consists in absorbing and elaborating liquid and air, whenever it is brought into contact with these two elements of its existence; while, moreover, the activity of its elaboration depends entirely on the quantity of materials which it receives in a given time. This excess of elaboration necessarily produces an excess of development; a function cannot be kept in action without giving rise to some product, and liquids and gases cannot be associated, without creating a new generation of organisations, of the same nature as the elaborating cell. Hence the afflux of blood towards the seat of this unusual elaboration; and, as the circulation receives an impulsion from the absorption, its rapidity must be in proportion to the activity of the function which called it into motion. The violence of the circulation removes all obstacles, where the solution of continuity has not sufficed to open a free passage; the lymphatic capillaries suddenly become carriers of blood. Hence the tumefaction, in consequence of this unusual development; the redness, from the afflux of coloured blood; and the fever, as a result of the irregularities and intermissions of this abnormal elaboration; activity of life, also, accelerating the period of partial death in the organ thus affected. The first layer of cells completing, before the others, the circle of its existence, the vesicles become emptied and dry, transforming themselves into an epidermic layer, which opposes itself to the continuation of these phenomena, in the inferior layers, by intercepting the contact of the air. Here commences a new series of phenomena: the diminution, in the respiratory elaboration, leads to the stagnation of the liquids accumulated at this point; and we have already had occasion to observe that every liquid, which is not vivified by the power of the elaboration, becomes decomposed, to the injury of the elaboration itself. The blood is transformed into pus, a substance of a different nature; the vital fermentation is changed into putrid fermentation, as soon as life ceases to animate it; and when thus deprived of its organising principle, the product becomes a poison to the system, if, through any new solution of continuity, an opportunity be offered it of entering into the current of the circulation.

Every animal, then, every vegetable, and every organised cell, absorbs caloric (for nothing organised is developed except under the influence of an elevated temperature), and disengages caloric (since development is merely the result of the combination of gases into liquids, and of liquids into tissues). We have never attempted to measure the quantity of heat absorbed by the organisation; and this quantity necessarily augments and varies with the temperature; for the development of the organ augments with it. Observe that bud so inactive during the month of March, and showing but little activity in April, sending forth its shoots for a distance of perhaps ten *centimetres*, and elongating itself almost under the eyes of the observer, in the months of June and July. Place a thermometer by the side of this branch, and you will see that the vegetable development and the liquid in the thermometer will progress or rise almost upon two parallel lines. But do you think from this circumstance, that you have discovered the quantity of caloric which the development absorbs? Assuredly not. It is not the quantity of caloric absorbed by the vegetable which you will have thus measured, by the observation of the effects of heat upon the expansion of the liquid; it is simply its development. No other interpretation can, with any appearance of reason, be given to this fact.

In the same way, thermometrical observations can never give us the quantity of heat disengaged by the organic elaboration. In the first place, because the thermometer can never be reduced to the dimensions of an elementary cell, that focus of the entire disengagement of caloric; also because, even then, it would be impossible for us to separate, from the disengaged heat which causes the liquid to rise in the thermometer, the exhalation of vapours which absorb caloric, and tend proportionally to make the liquid fall in the glass. Again, can we suppose that the quantity of heat disengaged by a microscopic cell of an eighth of a *millimetre* in diameter, can have sufficient power to traverse, without being dissipated, a glass-tube of two or three *millimetres* in thickness, and from twenty to thirty *centimetres* in length. Calculate, by analogy, what a mass of cellular elaborations must be combined together, to obtain a sum of effects appreciable to our most delicate thermometers. And when, in fact, we do obtain results appreciable to our observation, by the expansion of the liquid in the thermometer, we have simply the sums of an infinity of elaborations, sums from which we must deduct the amount of caloric with which the surrounding medium is impregnated, and to which we should also add the quantity of caloric which the sweat and the transpiration absorb and subtract from the influence of the thermometer. Thus, when the surrounding medium absorbs the whole of the caloric, or when the living being is too small, to furnish that proportion which becomes appreciable by our instruments, it is the custom immediately to assert that the animal disengages no caloric. Now, what heat sensible to the thermometer, or the galvanometer, is disengaged by the bug, the flea, and many of our insects? And yet analogy plainly indicates that these insects set free caloric, in a proportion equal to that of a group of cells of the same diameter, situated upon any organ in the superior animals. With regard to vegetables, however, we are obliged to come to an opposite conclusion; the negative results obtained by experiments upon the trunks of trees, allow of no comparison between the sum of caloric disengaged by the elementary cells of the vegetable tissue, and that set free by the same order of cells, whether in the superior or inferior breathing animals. On what, then, does this difference depend? On a difference of chemical elimination, which renders even visible to our eyes the difference of their respective development. Vegetables absorb as much, or even more, caloric than animals; for they are developed only when in immediate contact with the solar rays, which hot-blooded animals avoid, or from which they at least shelter themselves. They disengage less; they, therefore, assimilate more. We may perhaps say the same with regard to cold-blooded animals, animals which breathe by branchiæ; although they do not disengage caloric in a degree which is sensible to our thermometers, they absorb more than animals with hot blood; they appear cold to the touch, because they attract the heat from every thing which surrounds them.

PROFESSOR OWEN'S LECTURES.

(Continued from p. 360.)

ENTOZOA.

The ancient philosophers styled man the microcosm, fancifully conceiving him to resemble in miniature the macrocosm or great world.

Man's body is unquestionably a little world to many animals of much smaller size and lower grade of organisation, which are developed upon and within it, and exist altogether at the expense of its fluids and solids.

Not fewer than eighteen species of internal parasites, or of those which infest the internal cavities and tissues of the human body, have been enumerated; and of these, at least fourteen are good and well established species of Entozoa.

Hippocrates and Aristotle had distinguished the human intestinal worms by the names of "Helminthes stronguloi" and "Helminthes plateiai;" but the study of these parasites in general has been reserved for recent times. Since the time of Linnæus, the stimulus which that great master gave to every branch of Natural History has been in no department more potent than in encouraging researches into the before neglected field of the Internal Animal Parasites.

To the labours of Bloch, Goeze, Zeder, and above all, to those of Rudolphi, we are indebted for our knowledge of these animals as an extensive class, which Rudolphi has characterised, under the name of Entozoa, as white-blooded worms without respiratory organs, and (but less accurately) without nerves.

The number of these Parasites may be conceived when it is stated that almost every known animal has its peculiar species, and generally more than one, sometimes as many as, or even more kinds than, infest the human body.

There are few common and positive organic characters which can be attributed to this very extensive and singular group of animals: they have generally a soft, mucous, and colourless integument, which in a few species is armed with spines. That the integument should be uniformly white or whitish might, *a priori*, have been expected of animals which are developed and exist in the dark recesses of other animal bodies. The mature ova are almost the only parts which naturally acquire a distinct colour; and the subtransparent body sometimes derives other tints, from the accidental colour of the food. Excluded also by the nature of their abode from the immediate influence of the atmosphere, no distinct respiratory organ could be expected to be developed in the *Entozoa;* but this negative character is common to the Entozoa with most of the other *Radiata* of Cuvier. In creatures surrounded by, and having part of their absorbent surface in contact with the secreted and vitalised juices of higher animals, one might likewise have anticipated little complexity, and less variety of organisation. Yet the workmanship of the Divine Artificer is sufficiently complicated and marvellous in these outcasts, as they may be termed, of the animal kingdom, to exhaust the utmost skill and patience of the anatomist in unravelling their structure, and the greatest acumen and judgment in the physiologist in determining the functions and analogies of the structures so discovered. What also is very remarkable, the gradations of organisation that are traceable in these internal parasites reach extremes as remote, and connect them by links as diversified, as in any of the other groups of Zoophyta, although these play their parts in the open and diversified field of nature.

Cellular Origin of Tissues.

The primitive forms of all tissues are free cells, which grow by imbibition, and which develope their like from their nucleus of hyaline. All the animal tissues result from transformations of these cells. It is to such cells that the acephalocyst bears the closest analogies in physical, chemical, and vital properties. When the Infusorial Monads are compared to such cells, and man's frame is said, by a figure of speech, to be made up of such monads, the analogy is overstrained, because no mere organic cell has its mouth, its stomachs, its testes, and ovaria. So also it appears to me that the analogy has been equally overstrained, which makes the acephalocyst a kind of monad, or analogous species of animal. We may, with some truth, say that the human body is primarily composed or built up of acephalocysts; microscopical, indeed, and which, under natural and healthy conditions, are metamorphosed into cartilage, bone, nerve, muscular fibre. &c. When, instead of such change, the organic cells grow to dimensions which make them recognisable to the naked eye, such development of acephalocysts, as they are then called, is commonly connected in the human subject with a lowering of the controlling vital energies, which, at some of the weaker points of the frame, seem unable to direct the metamorphosis of the primitive cells along the right road to the tissues they were destined to form, but permit them to retain, as it were, their embryo condition, and to grow by the imbibition of the surrounding fluid, and thus become the means of injuriously affecting or destroying the tissues which they should have supported and repaired.

Mode of Formation of the Tænia.—Its Generative System.

From this description it will be seen that the proportions and almost the forms of the ovarium and testis, are reversed in the *Bothriocephalus* and *Tænia*: the positions of the sexual outlets are unquestionably very different in the two genera. Both, however, agree in presenting the most extensive development and preponderance of the generative system that is known in the Animal Kingdom. In fact there is scarcely space left in the hinder joints of the tapeworms for the organs of any of the other systems.

The natural rate of life of the tapeworm, the consequences to the remaining adherent part, of the repeated detachment of the ovigerous segments, the extent to which they are detached and subsequently renewed, have not yet been, nor are likely ever to be, the subject of direct observation in these internal parasites of man.

Some highly interesting facts have, however, been made known by the same professor to whom we are indebted for a knowledge of the anatomy of the *Bothriocephalus latus*, in the economy of another species of *Bothriocephalus*, which is extremely common in the small sea-fish called *Cottus scorpius.*

During midsummer, these tapeworms are fully developed, and their segments are laden with ova. They adhere by the fore part of the head to the mucous surfaces of the appendices pyloricæ, and cast off the ovigerous segments, sometimes in their whole length; so that headless tapeworms are found in the lower part of the intestine, whilst a number of heads without bodies may be observed adhering to the pyloric appendages between other tapeworms of very different lengths. The heads thus left behind generate a new series of perfect joints in the following way: the joint next the head is divided by a transverse fissure into two, each of which repeats the same process as soon as it is somewhat grown. Whilst the joints multiply in this way, they continue to increase in size, and so become removed from the head; but at a certain distance from the head, this mode of subdividing ceases, and the whole nutritive power is applied to the development of the organs of generation. During winter the *Bothriocephalus punctatus*, still adhering firmly to the mucous surface of the pyloric appendages, grows to its full length, and the generative organs are formed; but no ova can be seen. These begin to appear at the commencement of spring in the posterior joints, and by degrees fill the uteri of all the joints, until they occupy those which are close to the head, when the separation from the head before described ensues, and this last-named member is left to repeat the important process.

No single joint of a tapeworm can develop a head, and form a new individual; the transverse fission relates only to the dissemination of the fertile ova, from which alone new *Tæniæ* are developed.

The hypothesis of equivocal generation has been deemed to apply more strongly to the appearance of internal parasites in animal bodies than to the origin of animalcules in infusion. But if a tapeworm might be organised from a fortuitous concourse of organic particles, or by the metamorphoses of an organic cell in the animal it infests, why that immense complication and extent of the organs for the production of normal fertile ova?

"The division of the body into joints is intended," as Professor Eschricht well observes, "to produce a coresponding number of bunches of ova, just as the repeated ramification of plants is destined to provide space for the production of new bunches of seeds." The head of the tapeworm is fixed to the mucous surface, and thence it derives the nutritive juices required for the whole organism; in the same manner as the root procures the nourishment of the plant from the soil. The ova having reached maturity, the joints rupture to liberate them; or the whole joint will be thrown off in the same way as the seeds of plants are freed, sometimes one by one, sometimes in masses, according to the particular manner of life assigned to every species of plant. "And is there any one," asks Dr. Eschricht, "who, upon the contemplation of this wonderful apparatus, and the extraordinary results of its agency, can for a moment imagine that it is without an object or an end?"

The geographical distribution of the human Cestoidea is, likewise, opposed to the doctrine of

their spontaneous origin. The organic particles, or alimentary mucus of a Swiss and Dutchman, are not so distinct in their nature as to account for the difference in their tapeworms. A native of one of these countries may be infested by the tapeworm peculiar to another region, if he sojourn there, just as the English sailor may be attacked by the Guinea-worm, if he visits the tropical regions where that entozoon is common.

The great anatomist Soemmering suffered from a *Bothriocephalus latus*. Now he was a German; but it was ascertained that he paid occasional visits to a friend in Switzerland. There, doubtless the germ of the parasitic worm was introduced into his body. The countless ova of the tæniæ, with their hard crusts or shells, and tenacity of latent life, are, doubtless, widely dispersed, and need only the accidental introduction into an appropriate nidus for ulterior development.

Extreme fertility of the Ascaris Lumbricoides.

The evidence of the fertility of the compound cestoïd Entozoa, was sufficiently marvellous: that which I have now to adduce, from a calculation made by Dr. Eschricht, in reference to the *Ascaris lumbricoides*, the commonest intestinal parasite of the human species,is scarcely less surprising. The ova are arranged in the ovarian and uterine tubes like flowers of the plantago, around a central stem or rachis. There are fifty in each circle, that is to say, you might count fifty ova in every transverse section of the tube. Now the thickness of each ovum is 1-500th of a line, so that in the length of one line there are 500 wreaths of 50 eggs each, or 25,000 eggs! The length of each division or horn of the uterus is 16 feet or 2304 lines, which for the two horns gives a length of 4608 lines. The eggs, however,gradually increase in size so as to attain the thickness of 1-60th of the line: we, therefore, have at the lower end of the horn 60 wreaths of ova, or 3000 ova in the extent of one line. The average number through the whole of the extraordinary extent of the tube may be taken at 14,000 ova in each line, which gives *sixty-four millions* of ova in the mature female *Ascaris lumbricoides*!

The embryo is not developed within the body in this species; the ova may be discharged by millions, and most of them must, in large cities, be carried into streams of water. An extremely small proportion is ever likely to be again introduced into the alimentary canal of that species of animal which can afford it an appropriate habitat. The remainder of the germs doubtless serve as food to numerous minute inhabitants of the water; and the prolific Entozoa may thus serve these little creatures in the same relation, as the fruitful *Cerealia* in the vegetable kingdom stand to higher animals, and minister less to the perpetuation of their own species than to the sustenance of man.

Tenacity of life of the Entozoa—Doctrine of equivocal generation.

The Entozoa are hardly less remarkable for their tenacity of life and revival from a state of apparent death than the Infusoria, and the knowledge of this property is indispensable to a fair estimation of the chances of the re-introduction of the ova of Entozoa into the bodies of living animals. In no class of animals has the origin from equivocal generation been more strenuously contended for than in regard to the Entozoa. The great entozoologists Rudolphi and Bremser were advocates of this doctrine; and Bremser did not scruple to charge the Berlin professor with a physiological heresy, when he ventured to account for the high organisation of certain Ligulæ infesting piscivorous birds, by the hypothesis that they had been developed from the lower grade which they previously exhibited in the cold-blooded fishes swallowed by the birds, through the stimulus of the heat and nutritious secretions of the more comfortable intestinal domicile to which they had thus been accidentally introduced.

The advocates for the equivocal generation of the Entozoa adduce the fact that herbivorous mammals are not less subject to Entozoa than carnivorous ones: and how, they enquire, could the ova of Entozoa be preserved in the water that serves as the drink of such animals? Or how, having become dried in the air, could such ova afterwards resume the requisite vitality for embryonic development? We may admit that the ova of Entozoa could not, like the much more minute ova of Pologastria, remain suspended in the atmosphere, since they are specifically heavier than water; but, with respect to their powers of retaining dormant life, we have sufficient analogical evidence to reject the assumption that they soon fall into decomposition.

Mr. Bauer has recorded many experiments on the *Vibrio tritici*, or parasite of wheat, a minute worm possessing the essential organisation of the Nematoidea, not less remarkable in their results than those of Spalanzani on the Rotifer: the Vibriones were dried, and when re-moistened, after the lapse of four to seven years, they resumed their living and active state. Dr. Blainville states that the *Filaria papillosa* revives from a similar state of torpidity produced by desiccation.

It has been proved that the mature Entozoa will resist the effects of destructive agents, as extremes of heat and cold, to a degree beyond the powers of endurance of the *Rotifera*, and which would be truly susprising were not the simplicity of the organisation of the Entozoa taken into account. A Nematoid worm has been seen to exhibit strong contortions—evident vital motions—after having been subjected above an hour to the temperature of boiling water, with a cod-fish which it infested; and, on the other hand, Rudolphi relates that the Entozoa of the genus *Capsularia*, which infest the herrings that are annually sent to Berlin, hard frozen and packed in ice, do,when thawed, manifest unequivocal signs of resorted vitality. If, then, the fully developed and mature Entozoa can resist such powerful extraneous causes of destruction, how much more must the ova possess the power of enduring such without losing their latent life.

Burdach, who has summed up the evidence at great length in favour of the equivocal generation of the Entozoa, adduces the example of the ovoviparous species as involving the limitation of the offspring to the lifetime of the individual which they themselves infest; but on this point Dr. Eschricht has well observed that the transmission of the living young of the *Strongylus inflexus* from one porpoise to another is readily explicable. This species of *Strongylus* lives in the bronchial tubes, with its head immersed in the substance of the lungs, and its tail extended into the larger branches of the trachea. The living young must naturally escape into the mouth, and, as porpoises are gregarious, the young worms would, by a short passage through the water, readily be introduced into the mouth of another porpoise, aud so reach the trachea.

The young of most Entozoa are subject to metamorphoses. I have already alluded to those of the Cestoidea in which the head in all the species seems first to be provided with six hooks. Those of the Trematoda are the most astonishing, and the locomotive condition of the young *Distomata* evidently relate to the securing their entry into the animal's body which they are destined to infest. Dr. Siebold has noticed the difference of form between the young of the Echinorhynchi and their viviparous parents; and this difference was so great in regard to the viviparous *Filaria medinensis*, that Dr. Jacobson was led to suppose its multitudinous progeny to be parasites of the parasite. Dr. Eschricht has observed that the flesh of fishes in summer is often studded with small worms, which, in one instance, he ascertained to be *Echinorhynchi*; and he suggests whether it may not be the breeding place of such species, and whether the *Trichina spiralis* may not belong to the same category. But how these embryos (if they be embryos) are diffused through the intermuscular cellular tissue, can only be known after long and laborious investigations: and nothing is more true than that a particular enquiry will be required for each particular species.

Coral islands and reefs formed by the calcareous skeletons of the Anthozoa.

The most important productions of the apparently insignificant race of Polypi are the accumulations of the calcareous skeletons of the *Anthozoa*, which form the coral islands and reefs;—the dread of the navigator,—the admiration of the lover of the picturesque,—the subjects of the closest and most interesting speculation to the naturalist and geologist,

That masses of rock many leagues in extent should be founded in the depths of the ocean, and built up to the height of hundreds of feet by minute, frail, gelatinous animalcules, is indeed a phenomenon calculated to stagger the unversed in zoological science, and which has demanded the repeated observation of the most accomplished and enlightened voyagers to render intelligible.

These zoophytic productions have been recently classified by Mr. Darwin under three heads: 'atolls,' 'barrier reefs,' and 'fringing reefs.' The term *Atoll* is the name given to the coral-islands, or lagoon-islands by their inhabitants in the Indian Ocean. An atoll consists of a wall or mound of coral rock rising in the ocean from a considerable depth, and returning into itself so as to form a ring, with a lagoon, or sheet of still water in the interior. The wall is generally breached in one or more places, and when the breach is deep enough to admit a ship,the atoll affords it a convenient and safe harbour. The outer side of the reef usually sinks to a depth of from two to three hundred fathoms, at an angle of forty-five degrees or more; the internal side shelves gradually towards the centre of the lagoon, forming a saucer-shaped cavity, the depth of which varies from one fathom to fifty. The summit of the exterior margin of the reef or wall is usually composed of living species of *Porites* and *Millepora*. The *Porites* form irregularly rounded masses of from four to eight feet broad, and of nearly equal thickness; other parts of tho reef are composed of thick vertical plates of the *Millepora complanata* intersecting each other at various angles, and forming an exceedingly strong honeycombed mass, The dead parts of these calcareous skeletons are often cemented over with a layer of the marine vegetable called *Nullipora*, which can better bear exposure to the air.

This strong barrier is well fitted to receive the first shock of the heavy waves of the fathomless ocean without; and, what at first appears surprising, instead of wearing away at its outer edge, it is here only that the solid reef increases. The coral animals thrive best in the surf occasioned by the breakers. Through this agitation an ever-changing and aërated body of sea water washes over their surface, and their imperfect respiration is maintained at the highest state of activity. Abundant animalcules, and tho like objects of food, are thus constantly brought within the sphere of the tentacula of the hungry polypes. Their reproductive gemmules are rapidly and extensively dispersed amongst the crevices of the calcareous mass.

By the force of unusual storms this outer reef is occasionally breached, and huge masses are torn off and driven towards the lagoon, where they form an inner barrier or reef. The broken surface becomes the seat of attachment of the young of the neighbouring corals, the successive generations of which, by the rapid growth and development of their calcareous skeleton, soon repair the damage of the storm. The masses of broken coral thus driven inward towards the lagoon, accumulate in time to the height of some feet above high water. These fragments are mixed with sand and shells, and form a favourable soil for the development and growth of vegetables, as cocoa palms, the large nuts of which may be borne hither by currents of the ocean, from Sumatra or Java, 600 miles distant. Turtles likewise float to the nascent island, browse on the sea weeds which grow in the lagoon, and breed there. Numerous species of fish and shell-fish flourish in the same still water, which abounds with animal life. Man comes at length and takes possession of the island; and the cocoa-nut, the turtle, and the fish afford him abundant and wholesome food. But you will ask how he supplies himself with that necessary of life fresh water? This is obtained in a very simple and unexpected manner from shallow wells, dug in the calcareous sand, which ebb and flow with the tides, yet are almost wholly free from the saline particles of the ocean. Some have supposed that the sea water lost its peculiar salts by infiltration through the calcareous mass. Mr. Darwin thinks that it is derived from the rain water, which, being specifically lighter than the salt, keeps floating on its surface and is subject to the same movements; howsoever this may be, the fact is certain. A fit

and convenient abode for the human species is fabricated by the action of the feeble, gelatinous polypes, and a wild and almost boundless waste of waters is enlivened by oäses which navigators have described as earthly paradises.

A Barrier Reef is essentially similar to the Atoll or Coral-Island. It runs parallel with the shores of some larger island or continent: separated, however, from the land, by a broad and deep lagöon channal and having the outer side as deep and steep as in the Lagoon Islands. Here likewise the skeletons of the Zoophytes, of which the reef is composed, are found on the outer precipitous wall as deep as sounding line can reach.

The third class of coral productions which Mr. Darwin terms "Fringing Reefs," differ from the Barrier Reefs in having a comparatively small depth of water on the outer side, and a narrower and shallower lagöon channel between them and the main land.

These differences in the characters of the wonderful fabrications of the coral animalcules are explicable by the following facts in their physiology. The animals of the *Porites* and *Milleporæ* cannot exist at a greater depth than twenty or thirty fathoms; beyond this the stimuli of light and heat derived from the solar beams become too feeble to excite and maintain their vital powers. On the other hand, their tissues are so delicate,that a brief direct exposure to the sun's rays kills them; and unless they are constantly immersed in water or beaten by the surf, they cannot live. Thus, in whatever position the calcareous skeleton of a Medrepore or Millepore may be found, it is certain that it must have been developed within thirty fathoms of the surface of the ocean. If it coats the summit of the lofty mountains of Tahiti, it must have been lifted above the sea by the elevation of the rock on which it was originally deposited. If it is brought up from the depth of 200 or 300 fathoms, as at Cardoo Atoll or Keeling Atoll, it must have been dragged down to that depth by a gradual subsidence of the foundation on which the living madrepore once flourished. It is by these movements of upheaval and subsidence of the earth's crust, that Mr. Darwin explains the different forms which characterise the extraordinary productions of the coral animal. The *Atolls* or Lagoon Islands, according to this author, rest on land which has subsided, and part of which was once dry. *Barrier reefs* indicate the islands or continents, which they encircle, to be the remains of land now partly submerged, and perhaps in progress towards final disappearance. *Fringing reefs*, on the contrary, indicate either that the shores are stationary, or that they are now rising, as in most of the Sandwich Islands, where former reefs have been raised many yards above the sea.

Elizabeth Island, which is eighty feet in height, is entirely composed of coral-rock. The coral animals, thus progressively lifted above their element, are compelled to carry on their operations more and more remote from the former theatres of their constructive energies, but cannot extend deeper than their allotted thirty fathoms: the direction of their submarine masonry is centrifugal and descending. Where the land that supports them is, on the contrary, in progress of submergence, they are compelled to build their edifices progressively higher and in a narrower circuit; in other words the direction of their growth is centripetal and ascending. The terms ascending and descending of course only here apply to the relation of the coral-builders to the land, not to the level of the unchanging sea.

The prodigious extent of the combined and unintermitting labours of these little world-architects must be witnessed in order to be adequately conceived or realised. They have built up a barrier-reef along the shores of New Caledonia for a length of 400 miles, and another which runs along the north-east coast of Australia 1000 miles in length. To take a small example, a single atoll may be 50 miles in length by 20 in breadth; so that if the ledge of coral rock forming the ring were extended in one line it would be 120 miles in length. Assuming it to be a quarter of a mile in breadth, and 150 feet deep, here is a mound, compared with which the walls of Babylon, the great wall of China, or the pyramids of Egypt, are but children's toys; and built too amidst the waves of the ocean and in defiance of its storms, which sweep away the most solid works of man. The geologist, in contemplating these stupendous operations, appreciates the conditions and powers by which were deposited in ancient times, and under other atmospheric influences than now characterise our climate, those downs of chalk which give fertility to the south coast and many other parts of our native island. The remains of the corals in these masses, though similar in their general nature, are specifically distinct from the living Polypes which are now actively engaged in forming similar fertile deposits on the undulating and half submerged crust of the earth, washed by the Indian and Pacific Oceans. Again, those masses of limestone rocks which form a large part of the older secondary formations, give evidence, by their organic remains, that they are likewise due to the secretions of the gelatinous polypes, the species of which perished before those that formed the cretaceous strata were created. As the polypes of the secondary epochs have been superseded by the *Porites*, *Milleporæ*, *Madreporæ* and other genera of calcarcous Anthozoa of the present day, so these, in all probability, are destined to give way in their turn to new forms of essentially analogous Zoophytes, to which, in time to come, the same great office will be assigned, to clothe with fertile lime-stone future rising continents.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, Sept. 7th, 1843.

BESIDES the gentlemen already named as the representatives of different learned societies, the following were present at the inauguration of the statue of Bichat, at Bourg (Ain)—Dr. Forget, for the Faculty of Strasburgh, Drs. Brachet, Barrier, Bonnet, Martin, Pravaz, Repiquet, Montain, Grommier, Bouchet, from Lyons. Bichat is represented studying the sources of life on a child, and at his feet is a half dissected body. Speeches were made by the prefect of the Ain, the Mayor of Bourg, Messrs. Pariset, Royer Collard, Bonnet, Larrey, Brachet, and Martin. After which the society met at dinner; several toasts were drank, first to his Majesty Louis Philippe, then to the memory of Bichat, to the representatives of the different societies, to M. David d'Angers.—Marie Francois Xavier Bichat was born at Thoirette, the 4th November, 1771. Under his father, Jean Baptiste Bichat, M.D., he began his medical education, but was soon sent to Lyons, to study under Marc Antoine Petit. In 1793, he came to Paris, and was one of the pupils of the celebrated Desault, who, from his master, became his friend and protector. "Bichat," says M. Ribes, "possessed such powers of divination, that he, as quick as thought, arrived at the truth, and seized it, in some measure, even before it existed." His first publication (*Clinique de Desault*) was an act of gratitude and filial piety. Seized with typhus, he fell a victim to this disorder, after fourteen days illness, the 22d July, 1802, aged 32. In announcing his death to the first Consul, Corvisart thus expressed himself. "Bichat has just died on a field of battle which numbers more than one noble victim. No person in so short a time has ever accomplished so many and such great things."

Another statue has been erected to the memory of the Abbé de l'Epée at Versailles. He was the founder of the Deaf and Dumb Institution at Paris, authorised by the Constituent Assembly in 1791. The Abbé died tho 23d December, 1789, aged 78.

M. Barthez, chief physician of the Military Hospital at St. Denis, has sent two memoirs to the Academy of Sciences. One on "the Absorbents in Man and Animals." The conclusions were, first, that all vegetable or mineral substances, placed in contact with the organs so as to be easily absorbed, are taken up by the venous system; second, that all animal or assimilate organic substances in the same conditions are absorbed by the lymphatics; third, that heterogeneous substances are taken into the system by tho veins, and the homogeneous ones by the lymphatics; fourth, that the lymphatics always absorb substances of an animal nature, whether nutritive or prejudicial, whereas the veins carry substances useless, if not hurtful, which are constantly of a vegetable or mineral nature. The other on the "Absorption of Pus." The author, from his researches, concludes that pus is not absorbed by the venous system, and as there are but two modes by which foreign substances can be introduced into the economy, it is natural to suppose that it is performed by the lymphatics.

M. Guyon communicated to the same Academy a curious case of the introduction of the hæmopis vorax into the vagina, where it fixed itself on the mucous membrane. A drawing representing the leech accompanied the letter. The wife of a brigadier of the gendarmery, resident at Bone, was seized with hæmorrhage, which her medical attendant thought to be metrorrhagia. All the usual remedies, however, failed in affording relief, and her husband being called off to Algiers, she followed him thither. The flow of blood still continued, and the woman growing weaker and weaker, Dr. Lebrun was called in, who, with other remedies, advised her to inject several times per diem a mixture of vinegar and water into the vagina. This treatment had only been employed four days, when the patient found a live leech in the linen, which she used, and the next day the flooding ceased. Since then it has not reappeared; the patient is now quite well.

By a royal ordonnance, countersigned by the Minister of Public Instruction, a secondary school of medicine is established at Orleans, and the following gentlemen are appointed professors.—Pharmacy and Chemistry, M. Petit—Medical Botany, Materia Medica, M. Corbin—Anatomy of Physiology, M. Debron—Clinical Medicine, M. Jallon—Clinical Surgery, M. Valut—Practice of Physic, M. Ranque—Surgery, M. Danoix—Midwifery, Diseases of Women and Children, M. Payen—Director, M. Jallon—Anatomical Demonstrator, M. Rochoux—Suppleants, Messrs. Rochoux, Lorrane, and Lepage.

M. J. Jeanscalme has published the following case of lusus naturæ. A woman with child, for the second time (the first having offered nothing extraordinary) was taken with labour pains at 5 a.m. At 10½ p.m. the head of the child was felt at the vulva, but on introducing the finger, a second head was perceptible above the brim of the pelvis. M. Jeanscalme, with the help of a colleague, succeeded in extracting two still-born female children, perfectly developed, adhering to each other from the umbilicus to the upper part of the sternum. The funis umbilicalis and placenta were single, and were expulsed ten minutes after the children. An exomphalus existed common to both.

The three following cases occurred at St. Louis, in the wards of M. Jobert de Lamballe.—Dropsy of the left maxillary sinus. The patient was a man, ætat. 25, and the disorder had been gradually coming on for the last five years. The nose was forced on one side, and on pressing the tumour, a noise was heard, similar to that produced by crumbling parchment. An opening was made in the bottom of the alveolus of the first molar tooth, which had been extracted some time previous, and a perforator introduced into the sinus—about ℥j of a viscous reddish liquid flowed out. A gum-elastic sound was then placed in the opening, and the next day M. Jobert pierced the external wall of the nostrils, in order to form a permanent opening for the passage of the fluid secreted by the lining membrane. Injections were then made, first with tepid water, and afterwards with a weak aromatic infusion. In the beginning, a very small quantity of the liquid injected, passed into the nostrils, but it gradually increased, and soon after, the opening in the alveolus was closed, the tumour decreased considerably, the noise was no longer heard on pressure, and the patient left the hospital.—Second. Luxation of the thigh upwards and forwards, produced in a man ætat. 32, by muscular action alone whilst wrestling with a comrade. Twenty-five leeches were applied, but finding himself no better, he came to the hospital twelve days after the accident. Tho head of the femur was easily felt in the groin, the trochanter was carried forwards, the glutei muscles flattened and stretched.

Both limbs were of the same length, but when reduced, the dislocated one was 0.394 inch longer than the other. Extension was made in a straight line, and simultaneously one leg was forced towards the other. M. Jobert gave the thigh a rotatory movement, pressing at the same time on the head of the bone, which entered the acetabulum without producing the characteristic sound.—Third. Dislocation of the thigh upwards and outwards. A man, aged 32, whilst lowering wine into a cellar, was struck to the earth by the cask which slipped from the ropes, and pressed forcibly on the outer inferior extremity of the right femur, forming, as it were, a lever of the bone. The limb was 2.756 inches shorter than the other, the internal muscles of the thigh relaxed, the glutei muscles prominent, the trochauter nearer the spine of the ilium, the toes, feet, and knees, turned inwards. The extension was first made in the direction taken by the bone, the limb was then carried outwards, and the femur pushed back into its natural position.

In reading the description given lately in the papers of a case of exorcism on a young girl, supposed to have been possessed by the devil for the last fifteen years, we can hardly believe that we are in the nineteenth century. The Bishop of Metz sent, *first* a priest, *then* a jesuit, but their endeavours were of no avail; the glory was reserved for Bishop Laurent, who, in two sittings, succeeded in driving the devil out of the body of the unfortunate girl. The description of all she underwent before he accomplished it, though curious, is too long to be transcribed.

The re-vaccinations performed in the Grand Duchy of Baden, give the following result. On 3,170 persons, 1,288 were vaccinated with primitive vaccine matter, of these 314 had pustules, which went regularly through their different courses, 397 irregular, and 577 of no effect; 1882 with secondary vaccine matter, of these 521 were regular, 821 irregular, and 540 of no effect. The Government of the Grand Duchy purposes rendering re-vaccination obligatory.

M. Mayor has just passed through Paris on his way to Angers. He proposes on his return to deliver a lecture exposing his principles and tachytomic methods.

In a late letter I mentioned that Professor Orfila had been requested to settle the difference which existed between the chemists employed in the affair of J. J. Pouchou. What follows is a brief analysis of the opinion emitted on this occasion by this learned toxicologist. "The presence of lead in the organs, or in the liquids thrown up, is not a certain proof that it was given with an intent to poison, because it may have been given as a remedy. The metal obtained, could not be that which exists naturally in the human body, the proportions being infinitely small, and could not have been procured in the metallic state by the method followed by MM. Barse, Porral, and Reynaud. It could not have been introduced into the stomach after death, simply because it existed in the liquids which were vomited up. As to the supposition of its having been given as medicine, this is inadmissible, for no physician would remain silent, knowing that the life of two of his fellow-creatures depended on his speaking. M. Dupasquier, in favour of his opinion, quoted what I published in 1838, viz., in cases of poisoning by lead, the mucous membrane of the stomach, offered several spots of a dull white colour; but, I added, if death took place after the third or fourth day, these white spots were less numerous, and could only be perceived with a magnifying glass, or after washing the mucous membrane with sulphydric acid. In conclusion, if the tests do not contain lead, and if Pouchon did not take an insoluble salt of lead, or one capable of so becoming in the stomach, it may be asserted that he was poisoned." Professor Orfila was then requested to analyse with MM. Dupasquier, Barse, Reynaud, and Porral, the potash employed, as well as the substances vomited. The result was, that the test contained no lead, and that it was more than probable that Pouchon was poisoned, but it was impossible to say if the lead was administered in a soluble or insoluble form. The jury having found a verdict of guilty, Mary Camus and Andrew Rocher were both condemned to death.

A poor deformed woman, six months gone with child, was received in the hospital de l'Ourcine to be treated for syphilis, and placed in one of Dr. Huguier's wards. Under a mercurial treatment, the syphilitic symptoms gradually disappeared, but M. H. convinced that delivery could not be accomplished at the usual time, called in one of the surgeons of the *Maternité*, and proposed provoking premature labour; contrary to his opinion, it was decided that this operation should be postponed, and the syphilitic symptoms continued. At 8 months the labour pains came on, and the child presented the right shoulder. A consultation was then held with Professor Dubois and Dr. Danyan, and it was agreed that if no change took place before night, embryotomy should be performed, the death of the fœtus having been ascertained by the state of the epidermis on the right arm, which was extracted. A bath was then given, and towards the evening, on examination, the arm was found to have been withdrawn, and instead of the shoulder, the buttocks now presented themselves. The lower extremities were easily extracted, and the delivery accomplished not without accident however, for the head in passing the vulva lacerated the perinœum and the posterior wall of the vagina. Two days after, symptoms of peritonitis declared themselves, and in spite of an active antiphlogistic and alterative treatment, the patient died.—*Post-mortem* examination: A tumour of the size of an egg, adherent to the upper edge of the uterus, contained an ichorous liquid, and an immense number of fungi. The different diameters of the pelvis, were,—*Brim*, from the spine of one ilium to the other $8\frac{1}{2}$ inches; from one anterior superior spinous process to the other 9 inches; transverse diameter 4 inches; sacro-pubal $3\frac{1}{2}$ inches; oblique 4 inches. The convexity of the sacrum was greatly developed. *Outlet*,—Pubio-coccygian diameter $3\frac{1}{2}$ inches; bi-ischiatic 2 inches; oblique $2\frac{3}{4}$ inches. *Arch of the Pubis*,—Height 2.362 inches; breadth at the summit 0.934 inch; at its base $1\frac{1}{2}$ inch. The child of the female sex weighed 3.309 lbs., and was 17.717 inches in length. *Head*,—Circumference 9.843 inches; transverse diameter 2.362 inches; from one shoulder to the other 5.118 inches. Soft parts removed from the occiput to the chin 3.937 inches, to the forehead 3,543 inches, to the bregma 3.150 inches, from the forehead to the chin 2.362 inches; bi-parietal diameter 2,953 inches; bi-temporal 2.165; vertical 3.543 inches.—M. Huguier, in speaking of this patient, says, that he does not attribute the death of the child and the miscarriage to the syphilis with which the mother was affected, but to the mercurial treatment; and this would take place sooner if the oxymuriate of mercury is employed.

Dr. H. Blatin, in a letter to the *Journal des Decouvertes en Medecine, Chirurgie, &c.*, claims the priority in favour of M. Cazenaud who presented in 1838, an instrument to the Academy of Sciences, which he called *cit-exciseur*. Larrey, who read a report on this instrument, condemned it, saying, that it was impossible to avoid splintering the bones, but M. Blatin affirms on the contrary, though he has repeatedly seen it operate, that he never found the bone splintered. Since then M. Cazenaud has announced that he has considerably modified his instrument, and can, with equal rapidity cut off a limb, in any mode he may think fit to adopt.

Academy of Sciences.—Sitting of the 4th Sept., 1843.—M. Alexander Redier addressed a letter which states that he had been treated by M. Colombat without success, in 1833 and 1834. Having heard of the method employed by M. Jourdant, he left the small town in which he practised in the department of the Charente Inferieure, came to Paris, and placed himself in his hands. The result was favourable and he thinks it but just that he should pay his debt of gratitude to the person who relieved him of his infirmity. As to the pretensions of M. Colombat, that this method is but a modification of his own, it is entirely erroneous, and the truth of this assertion will be proved in a treatise *ex professo* which will shortly be published on this subject. This letter was forwarded by M. Becquerel.—The *Societe Hollandaise des Sciences at Haarlem* sent a list of their different prizes to the Academy. Among the following may be noted as interesting to the medical profession: Memoirs *to be sent before the 1st January*, 1845—1. What are the chemical changes which take place in fruit as it ripens? Give an exact analysis of several species of fruit, applicable especially to vegetable physiology.—2. Compare the physiological and chemical properties of animal and vegetable albumine. Point out a certain method of separating this substance in a pure state from vegetable and animal matters, and shew by experiments in what they differ, or if they are one and the same —3. What is the difference between the gastric juice in hot-blooded and cold-blooded animals, and how are the changes produced in the stomach by this liquid at so different a temperature?—4. Is the carbon in plants produced by the decomposition of carbonic acid, or of another substance? Does the carbonic acid (if it forms the carbon) enter the plant by the root, by the leaves, or by both at the same time? Are there, besides the carbonic acid, any other carboniferous substances dissolved in the water contained in the earth, which are absorbed with this water? If so what are they, and how is carbon separated from these substances, or from the carbonic acid?—*To be answered before the 1st Jan.* 1844,—1. What have modern physiological experiments taught us concerning the different sympathies, and what utility have they been to pathology or therapeutics? The society wishes that the physiological and medical questions be demonstrated by new experiments.—2. Give an anatomical, physiological, and microscopical description of the *leontodon taraxacum*, in the different epochs of its growth—3. Do plants absorb nitrogen from the atmosphere? If so, by what organs does this absorption take place, what is the relative quantity absorbed, and what influence does the nitrogen exercise on the development of the plant, and on its chemical composition?—4. What has pathological anatomy taught us since the last 30 or 40 years on the nature of diseases little known before that period, and how far has it contributed to improve the treatment. The prize is for each question a gold medal, worth 150 Dutch florins, with an addition of 500 florins, if the memoir is worthy of the recompense. Memoirs written in Dutch, French, English, Italian, Latin, or German, to be sent (p. p.) to M. J. G. S. Breda, perpetual secretary of the Society, Haarlem.

Academy of Medicine.—Sitting of the 5th Sept.—M. Londe informed the Academy that the remains of Bichat were still in the ancient cemetery of Clamart, but rumour having announced that this cemetery would shortly be destroyed, he thought something ought to be done in order to prevent his bones being dispersed. The question will be decided by the *conseil d'administration.*—M. Gaultier de Claubry read the first part of a memoir to refute the opinion developed by M. Bousquet in the preceding sitting, that vaccine matter was not so powerful as it was 15 years ago. In his opinion, founded on an experience of 40 years, the vaccine is now as good a preservation against variola as it was 15 years ago.—M. Bonnafond, correspondent of the Academy, read an observation on the cure of a person affected with deafness, by the perforation of the membrana tympani, and by expelling the caseous matter contained in the tympanum by injections made by the tuba Eustachiana. He concludes, 1st, That the membrana tympani, incus and malleolus are not absolutely necessary for audition.—2dly. That the destruction of the membrana tympani does not render the patient incapable of modulating sounds—and, 3dly. That the stapes appears to be absolutely necessary for hearing, as when it is expelled the person becomes deaf.

Garland de Beaumont, D.M.P., B.L. & S.
Honorary Physician to the Spanish Embassy.

PERISCOPE OF THE WEEK.

(British and Foreign Medical Review; Medicinisches Correspondenz-blatt; Bayer. Aerzte; Nederlandsch; Lancet; Gazette Medicale de Strasbourg; Journal des Connaissances Medico-chirurgicales; London and Edinburgh Medical Journal; Medical Gazette; Gazette Medicale; Pharmaceutical Journal.

The Glands of Duverney.—The existence of the glands discovered by Duverney

on either side of the vagina of the cow, and afterwards by Bartholinus in the human female, was denied by Haller, who declared that these were merely mucous crypts. They were previously described by Peyer, Harder, Morgagni, Santorini, and others; and more lately by Mr. Taylor and Mr. Guthrie. The attention of Professor Tiedemann was directed to this subject by a remark made by Dr. Fricke, of Hamburgh, regarding the liability of the follicles at the entrance of the vagina to inflammation and ulceration, and after a little dissection he found Duverney's glands, which he thus describes:—they are situate at each side of the entrance of the vagina, beneath the skin covering the posterior or inferior parts of the labia. They are likewise covered by the superficial fascia of the perineum, and by the fibres of the constrictor vaginæ. They here occupy a space included between the lower end of the vagina, and the ascending ramus of the ischium, and the ramus of the clitoris and erector clitoridis muscle. Above them lie those fibres of the levator ani, which take their origin from the ischium, and behind them are the transversi perinei muscles. The glands are enveloped in very loose cellular tissue, the removal of which requires very careful dissection, in order not to cut away the glands with it. They are rounded but elongated, flat and bean-shaped. Their long diameter varies from five to ten lines, their transverse from two and a half to four and a half, and their thickness from two and a quarter to three lines. They are not invariably present, and in advanced age diminish in size, and sometimes entirely disappear. From the anterior edge of their upper part an excretory duct runs horizontally forwards and inwards, beneath the constrictor vaginæ, to the inner side of the nymphæ, where its opening may be detected just in front of the carunculæ myrtiformes, and surrounded by several small mucous follicles. Their office is to secrete a thick, tenacious, greyish-white fluid, which is emitted in large quantities during sexual intercourse, and the uses of which are at present unknown. These glands are subject to various morbid affections, more especially during the progress of virulent gonorrhea. They have been found red, swollen, and inflamed in the body of a young woman, who had died from puerperal fever.

Shortening of the Cervix Uteri during Pregnancy.—Dr. Birnbaum, of Bonn, observes that the degree of shortening of the cervix uteri appears liable to modifications from so many causes, that it affords but little clue as to the stage of pregnancy. In muscular and athletic women, the lower segment of the uterus becomes developed less readily, and the shortening of the cervix uteri takes place at a later period than in females of a more delicate frame, while the firm and unyielding abdominal parietes prevent the uterus from sinking down into the cavity of the pelvis until an advanced period of pregnancy, or even until the commencement of labor. In such persons too, the base of the cervix becomes enlarged, and the difference between apparent and real shortening of the neck of the womb is often extremely remarkable. In women of a directly opposite temperament, those in whom there is great laxity of fibre, and who are the subjects of leucorrheal discharges, it likewise often happens that the cervix remains long, cylindrical, very dilatable, and with an open os uteri for many weeks. Often indeed it is scarcely at all shortened till labor actually sets in, when its dilatation occurs in an almost mechanical manner. There are also other causes of a more local nature, which modify the changes of the lower segment or neck of the uterus, as the excessive distention of the uterus, pendulous abdomen, too great or too slight inclination of the pelvis; contraction or malformation or excessive width of the brim of the pelvis; unnatural presentations of the child, or any cause which keeps the head high above tho brim of the pelvis.

Expulsion of a Living Adder from the Stomach.—The son of a schoolmaster living at Windheim, consulted Dr. Schnizlein, complaining of frequent attacks of colic, excessive hunger, alternating with inappetence and gastric disorder. He had frequent nausea, hypothimia, and other symptoms of derangement, and was much emaciated. One day after dinner he was seized with violent efforts at vomiting and with much trouble expelled a living adder (*coluber natrix*) thirteen inches long, and about an inch thick in the middle; gentle laxatives and tonics were ordered, and he soon recovered. The part of the country where the young man resided abounds with adders, and on enquiry it appeared that he had drank some water from a forest-fountain two years and a half previously, when he swallowed something, he knew not what.

Aneurism by Anastomosis.—Dr. Suermann, of Utrecht, tried the injection of equal parts of wine and brandy in a case of this disease occupying the right cheek of a boy, 14 years old, with some advantage. A large amount of inflammation followed each operation, which was frequently repeated, and at the date of the report, the tumour was so much diminished as to give rise to the hope, that it would ultimately be altogether dispersed. After the incision had been made, and previously to the injection of the fluid, a certain quantity of blood was allowed to flow; this diminished in quantity after each operation. Pressure had been tried previously, but without any corresponding advantage.

Action of Brandy in Drunkenness.—Dr. Schultz says, alcohol acts on the bile and the colouring matter of the blood. Part of the alcohol taken into the stomach is absorbed there, and passes directly into the blood, but the larger part thereof enters the duodenum, attracts the bile there, and deprives it of the property of neutralizing the acids of the food, thereby causing perversion of chylification—re-absorption of the materials of the bile not precipitated by these acids, &c. In the blood, it is the microscopic, rather than the chemical elements which are changed. Its colouration is altered; the membranes of the coloured vesicles lose their consistency, and allow the colouring matter to escape, and that the more readily the younger the vesicles are. The greater part of the functions are disordered. Dr. Schultz is of opinion, that delirium tremens is due, therefore, to a perversion of the blood, and not to a direct irritation of the nervous system.

Poisoning by Decomposed Meat.—Dr. Sigg mentions a remarkable instance of poisoning on a rather extensive scale, which took place at Andelfingère, in the canton of Zurich, in June, 1839. About six hundred persons partook of roasted meats and hams partially decomposed, of whom about four hundred and forty-four were taken ill, and nine died. Their illness appeared to be a species of typhoid fever, and the treatment consisted of an emetic at the beginning, chlorurетted water as a drink, leeches to the abdomen, frequently applied, and mercurial friction carried to some extent.

Intra-uterine Cutaneous Disease.—Dr. Keiller, of Dundee, was called to a lady in the eighth month of her pregnancy, who complained of an acute pain in the left side of the abdomen. For four months preceding, she had suffered very severely from acute paroxysms of pain in the abdomen, the left iliac region being more particularly described as the seat of suffering. Labour commenced three days afterwards; previous to the discharge of the liquor amnii, the hard, globular presentation indicated a head-case, but on the rupture of the membranes, instead of the smooth, soft, yielding scalp, a rough, hard, and irregularly fissured surface presented itself, the usual guides to position—the fontanelles, sutures, and ears—being altogether undistinguishable. On delivery taking place, the entire dermoid covering was found to be hard, preternaturally thickened, and deeply rent, the whole body seeming as if completely enveloped in an irregular coating of cartilaginous structure. So deep were the numerous fissures in the hard and much thickened scalp, that in appearance, as well as to the touch, they very much resembled the sutures, or rather the serrated edges of the bones of a disarticulated adult skull. The skin of the face, in like manner, consisted of ossified-looking portions, also irregularly fissured; the nose and ears were represented by mere tubercular knobs, without apertures; the eyes were altogether undeveloped—red fleshy-like cushions occupied the eyeless orbits: the mouth seemed large and gaping, and the tongue was voluminous and protruding. The skin of the trunk and extremities was equally hard and cartilaginous, though not so thick as that of the head and face; the rents or cracks were so extensive on the abdomen, that it appeared in several parts altogether devoid of dermoid covering. The genitals, like the nose and ears, seemed a mere tubercular knob. The child survived its birth twelve hours. The parents were apparently free from any constitutional taint, and their other children, three born before, and one after the one just described, were altogether healthy. Dr. Simpson, of the University of Edinburgh, through whom the particulars of this case were forwarded to our northern cotemporary, is of opinion, that the disease is caused by a physical inexpansibility of the integumentary coverings, and believes it to be more analogous to ichthyosis, than any other cutaneous disease. Hinze regards it as allied to the lepra of the Greeks, or elephantiasis leprodes, and supposes it to be connected with a syphilitic taint on the part of the parent. The cutaneous fissures are, in all probability, merely a secondary and mechanical result. It appears that the epidermic layer, or rather the surface of the true skin which secretes it, is the part involved in the disease, and Steinhausen expressly states, that in the cases described by him, the skin under the two layers of thickened epidermis appeared to be quite healthy.

Removal of Dropsical Ovaria, Entire, by the Large Abdominal Section.—Mr. Walne has recently repeated this operation on a patient brought to him by Mr. Camplin. She was a widow lady, 57 years of age, married late in life, and had never been pregnant. When seen by Mr. Walne, she presented the appearance of a woman eight months advanced in pregnancy; there was distinct fluctuation and dull sound over the greater part of the abdomen, with a circumscribed character of tumefaction. A sense of dragging about the cartilages of the ribs, chiefly of the right side, was her principal uneasiness. The uterus appeared healthy, and of moderate size, and there was not any symptoms of general dropsy. She ceased to menstruate at the age of 49. The diseased ovarium was on the left side. The internal use of the hydriodate of potash, with liquor potassæ, was tried for more than two months, but the disease gaining ground, the operation

was decided on in a consultation with Dr. James Blundell, and performed on the 30th of May, the patient having been kept quiet and in a state of absolute rest for several days previously, to remove general excitement, and also a painfully swollen condition of the left leg, with tenderness in the course of the veins. The bowels were also freely opened, so that there should not exist a necessity for acting on them again for 48 hours, and some good beef tea was administered about two hours before the operation, to afford the necessary support. The skin of the abdomen having been marked with a solution of nitrate of silver in lines crossing the linea alba, to secure the correct adjustment of the wound, the temperature of the room being maintained at a litttle above 70 degs. Fah., and the steps of the proceeding having been previously described to the medical gentlemen and assistants in another room, the patient was placed on a couch in a sitting posture, her feet upon the ground at its end, her back well propped by pillows, and an eight-headed roller laid beneath her back. A small incision was first made of an inch and a half in length, and the abdomen cautiously opened to a still less extent in the linea alba. By a careful division of the tendinous and peritoneal layers, the surface of the sac was made visible, when a finger, passed in every direction between it and the peritoneum, discovered that there were not any adhesions. The skin was next divided from above downwards to the first wound, and thence to the pubes, in all to the extent of about twelve inches; then, with a probe-pointed curved bistoury, guided and guarded by two fingers of the left hand, the peritoneum was opened to the same extent. The wounded structures separated on each side, and the tumor, being devoid of adhesions, steadily advanced through the incision. They were followed by the hands of one of the gentlemen, and closed behind the tumor as opportunity offered, so as to cover the viscera with the peritoneum itself as promptly and as completely as possible. The tumor was steadied, while Mr. Walne passed two fingers of the left hand behind the left uterine broad ligament, which formed the pedicle, and by their guidance, with a suitable needle, carried a ligature behind, and thence through the middle of the pedicle, for the purpose of tying it in two portions. The first half of the ligature was readily and firmly tied, but the second broke. The entire pedicle was then included in one double ligature, and divided between it and the tumor. It was very short, and the uterus lay backward in the pelvis, with a part of the distended ovarian sac in front of it. Some hœmorrhage followed the removal of the tumor, rendering requisite the application of another ligature on the pedicle. The coagula having been cleared away, and the edges of the wound adjusted, nine interrupted sutures were applied, long pads of lint laid down on each side, and over them slips of plaster passed from side to side across the abdomen. The heads of the roller were then carried once round her with the requisite firmness and tied, and the patient, who had been scarcely faint during the operation, was conveyed to bed, the pulse being firm and frequent, and the skin warm. She had a small dose of morphia, which was repeated in an hour: she passed a good night, but slept little, the urine was drawn off by the catheter; the next day the abdomen was free from distension and tenderness, except in the line of the wound and the left iliac region; pulse 120, tongue clean and moist; slept at intervals during the day, and had an anodyne at night. On the third day after the operation, the wound was found to have united throughout, except for about three quarters of an inch at the lower end, where the ligatures of the pedicle were placed. The stitches were all removed. Some irritation set in the next day, and on the 5th a miliary eruption shewed itself on the skin, and soon became general. On the 7th there was considerable uneasiness in the left iliac region, with one tender spot feeling like an intestine in a state of contraction, which was relieved by the action of an aperient. Two days afterwards, the left leg, which had been swollen previously to the operation, became the subject of mild phlegmasia dolens, with which at one time the right leg was also threatened. Convalescence was very gradually established; some tenderness in the situation of the veins in both groins was experienced for many days; clammy sweats broke out at times, and pains like those of rheumatism were often complained of during recovery. As to the wound, what was chiefly remarkable was, that from the peeling of the skin, occasioned by the innumerable little blisters of the miliary eruption, its whole line was made raw for a couple of days, and at the part where the ligatures hung forth, a discharge, just about the time of the subsidence of the worst symptoms of irritation, was observed in greater quantity than at other times, and then it was offensive, but in general it was healthy and not at all profuse. The ligature first tied, which included half the pedicle, came away in about five weeks; the others, which embraced the whole pedicle, had not separated at the time of the report.

The tumor weighed sixteen pounds and three quarters, and when laid in a dish measured in horizontal circumference two feet 11½ inches; in vertical circumference two feet six inches lengthways, and two feet 3½ inches across.

TO CORRESPONDENTS.

H. P., S. S., and Others.—*The Commissioners have resolved to admit persons having a surgical diploma from a royal college or university in Scotland or Ireland, to the same rights, under the Poor Law Amendment Act, as members of the Royal College of Surgeons of London. This is a consequence of a recent opinion given by the Attorney General. It is worthy of remembrance that at the publication of the former regulations which excluded those who may now be admitted, we distinctly announced and proved that the Commissioners were acting illegally.*

Veritas.—*We are thankful for the letter, which will keep. The Westminster School, and its prospects, will not escape our memory. Our Correspondent's letter will appear in a proximate number, with probably some remarks of ours.*

Mr. Horton.—*The paper is clever; but we have not space just now for the controversy on hydropathy it would most probably provoke.*

Inquirer. *No. It is not a reasonable creature.*

I. S. H.—*Cholesterine occupies a place beside spermaceti. It is not a resin, but between that and fat. But our Correspondent will find, we think, an article on it in one of our back numbers.*

F. calls our attention to a specimen of Mr. Wakley's skill as a poet, furnished in a leading article of the "Lancet." The lines are:

> My mother had a little dog,
> They TINY did him call,
> Sometimes the little Tiny would
> Impurify the wall.
> And when he saw a little smoke,
> *He'd think it was on fire;*
> And then turn round the other leg,
> And reach a little higher.

This is somewhat indecent, and rather corresponding to a genius which could indite poetry by the mile if he were paid for it; nevertheless, we doubt its being Mr. Wakley's. There is other intrinsic evidence that it is not. Smoke and fire, and impurified walls, and Tinys, are topics he keeps clear of, on the principle that the son of a hangman never talks of a halter. Nay, we have been informed by a Correspondent, that his very useful factotum, deputy-coroner Mr. Mills, was sent to Coventry because, in answer to an enquiry "how does that H—— of a Times *get on," the response was "like a house on fire."*

B.—*Of course it was Dr. Carson, not Carswell.*

A Constant Reader *wishes to know what we* "physiologically" *think of marriage. Editorially our opinion is, that he is a happy man who can get a wife, and has money to keep one. Of course it "prolongs life."*

M.A.—*We cannot fix on the best depilatory. Our experience does not lie that way. The following is the formula for the* Chinese depilatory. *Fresh burnt lime 16 ounces, pearlash 2 ounces, sulphuret of potash 2 ounces; reduce them to a fine powder in a mortar, and then place them into closely corked phials. In using, first soak part in warm-water; apply a little of the powder made into a paste, If irritating to the skin wash off with hot vinegar or water. This is one of the simplest we think, and probably the most efficient. We know of nothing to secure all kinds of clothing against combustion; but are told, by a good authority, that one part of sal ammoniac, with four of water, dissolved, will make clothes impregnated with it incombustible. Alum and water have been said to have the same effect.*

The Carlisle Inquest.—*We have received all kinds of letters, with several newspapers, in reference to this ill-judged transaction. We see no reason to change our recorded opinion on either side.*

P.P.—*We repeat that we have all the volumes complete, but vol. 2, the numbers 35 to 40 of which we shall be happy to give the full publishing price for. Our numbers, however, are getting so scarce for vols. 5, 6, and 7, as well as the current volume, that gentlemen completing sets will do well to enquire early.*

We are kindly informed that Mr. Carter, the late Secretary of the North of England Medical Association has been succeeded by Dr. Charlton in that post.

Advertisements and information for our students' number cannot be sent too early.

Gentlemen who have forwarded communications, not noticed, are requested to think them declined, or under consideration.

Portfolios for the Medical Times.—*Our bookbinder is preparing an ingeniously made portfolio, of great neatness, and lettered on the back, in which the numbers of the current twelve months (two vols.) can be weekly deposited, and preserved convenient for reference, and clean for binding. The covers and back are composed of such strong materials, that the portfolio, with a single number, will stand like a book on the library shelf. The price is 5s. Copies will be ready on Wednesday next, and may be had by giving an order to any bookseller or newsman.*

Errata.—*In our last number, page 375, line 37, for 4,411 lbs. read 4.441 lbs., and so throughout.*

THE MEDICAL TIMES.

SATURDAY, SEPT. 16, 1843.

> And thus the native hue of resolution
> Is sicklied o'er with the pale cast of thought.
> HAMLET.

THE evils and dangers under which the social state now labours, is one of the few common grounds on which thinking men of all parties can *unfortunately*—we must be pardoned the Hibernicism—meet in happy harmony. For our part, we are as firmly convinced of their reality as the warmest zealots in politics; and having—it may be—some little stake in the country, we have, in an honest spirit of duty, done more than most of them—applied our mental energies to the discovery of a remedy. Ours is a safe, simple, and practical plan—one which, if carried out unflinchingly, without regard to the political cowardice of this side, or the maudlin sympathies of that, must be admitted by every man who has an acre or its worth which he can call

his own, to be fully equal to the emergency. For once, with our readers' leave, the nation shall be our patient, and thus shall we, in all humility, prescribe.

Politicians may talk as they like about the etiology of the present distress and discontent, but the class of *sane* men know that the grand disease these symptoms clearly indicate—the true *teterrima causa* these calamitous premises prove, is that expressed by the old poet—the over-production of humanity. We have had, in England, too much of that least useful of the world's manufactories, and the great lamentable fact we have to deal with, and the true crisis we have now to meet is no other—disguise it how we may—than that of having, in the human family, more pigs than teats. Now, the statesmen, with a circumvagant policy, which always provokes our wonder, act as if they had no notion of a cure save that of increasing the teats. With the obvious remedy staring them in the face—a remedy so well known in the prolific East, and so liberally used by sage antiquity—these men travel to the utmost extremities of Adam Smith or Gibbon Wakefield for some other—forsooth, *milder*—specific. They remind one of the gouty provincial who, having Parr's longevity pills offered him for thirteenpence, travels to London to give Mr. Guthrie a guinea for a scrap of ill-written paper,—or of the farmer, who, having grass on his house thatch, instead of bringing that down to the cow, raised the cow by a pulley to it. Increase the teats, indeed! What do we, when we have too many blind puppies, or kittens? That let us do with too many little pigs, and—but we must develope our scheme with the caution and order that befit its importance.

The etiology being thus conceded us, we may consider whether the State—or, in other words, *we*—derive any of those tangible, palpable advantages from a surplus population, which would make it prudent to conserve so huge a social evil. The true test of *value*—in which word we include all that appertains to our enjoyments—is not superabundance, but scarcity. To be without demand, and to be utterly worthless, are correlative terms. None who know on what principles value is regulated, will dispute so self-evident an axiom. But the tribes of unemployed and useless poor have long been known to be drugs in the market. Far, indeed, from being of use, they are a positive injury. Their yellow, lank, haggard faces, wound our susceptibilities to the beautiful; their voices—especially when they beg—sound jarringly on a refined and musical ear, and it is not improbable that, in heedlessly passing one or other of them, nether garments of purest white may be sullied by their rude and dishonouring contact. They cost us also money in schooling them—churching them—workhousing them—policing them—trying them—and hanging them. Our last scheme of managing them—the Poor Law Amendment business, has turned out no amendment business at all, We could not do without it, for our rents were to be then swallowed up; and we can't do with it—for in Wales particularly, it swallows up rents, and it puts ricks and necks in jeopardy besides. Now why is all this? Why is it we should be thus troubled? and why is it that that what should be a gentleman's paradise is getting so uncomfortable,—and that we can hardly call our own what is not other people's? Simply because with *the* direct surgical remedy before our eyes we have been hunting for placebos. When we mention that remedy people will stare at their simplicity in not seeing it before—like the courtiers, when Columbus made the egg stand upon its broken end.

We are not going to recommend any savage military executions, as the more shrewd of our readers guessed. Heaven forbid! They might, perhaps, *abstractedly*, be more humane than prolonged sufferings—but they are against the spirit of the present age. Physical force is vulgar: our delicacy very properly stands aghast at the shedding of blood. A decidedly vigorous policy—what is worthy of what we call in these day, sa great man—can't hold out against the age's mawkish sensibilities. Besides, the countless unfortunates might not appreciate the decision of our policy more than the enlightenment of our charity, and—peradventure, they might prove too many for us. We must yield, then, to the time's weakness, and use less direct means; and the great plan we would suggest would be to turn Nature's DISEASES more to our commodity than we have done. Let *them* be our army. The power which makes fire, air, water, and the very lightnings of heaven do our biddings, even when we bid marvels, must be extended to the realm of diseases, that we may pluck from such nettles the flower—national safety. They will work for us peacefully, bloodlessly, silently, and, what is more, will not want aid because this man loves interest, that indolence, the third, religion; all three will here contrive to shew reason for not giving the work a resisting hand.

When the Mamelukes were superabundant in Egypt, Mahomet Ali enticed them into a court-yard, and shot them from the surrounding ramparts. This course was necessary, perhaps, in that unenlightened country, but would not be suited—as we have said—to the genius and character of the natives of this. OUR PLAN must be to allow men of property to speculate in the building of houses in towns just after their own fancies, and on the most economical principles their ingenuity can suggest. Let them have no let to build courts, consisting of rows of houses within eight to ten or twenty feet of each other, having eight or ten houses in a row, blocked up at one end by a high wall, and communicating with narrow streets only by an arched entry of three feet wide. Let endless courts of this kind—bidding defiance to the entrance of air, and connected together by lanes and streets of the narrowest kind—form the abiding places of the great bulk of our town populations. In addition, let underground cellars, about six feet high, be built and inhabited *ad libitum;* let the landlord, if he please, leave them without windows, with a clay or stone floor, and no possibility of ventilation when the door is shut; let none of these abodes have privies, either in the courts or by the cellars, and leave the precincts of both, week after week, in all the filth which the indolence of the inhabitants will probably allow to accumulate about them. Our medical readers will want no explanation, either of the design or of the certain effect of these recommendations. They need not be told that in such a densely-packed mass of dirty and unventilated habitations, filled, as they will be to suffocation, by tenants and lodgers, who, in proportion as they are useless to society, will be breathing the foul exhalations from each other's lungs and ordure, we have more than an army for thinning a redundant and threatening population. The lungs in contact with a true malaria, poisonously concentrated—the blood not oxygenated—the respiratory organs cannot resist decay, fevers are not only encouraged, but generated, created, and turned into epidemics—and the whole pauper population must be cleared from the face of the land every eight or ten years. The only two direct aids we would ask from Government, as further requisite to achieve this great result, would be a tax on windows and soap.* This would thwart any incipient longing after ventilation or cleanliness. The cupidity or insouciance of landlords, with the poverty and laziness of the tenants, will safely accomplish the rest.

We are not without fears that some of our readers will think the boon we offer utopian. They may think our scheme a very fine one in theory, but fear it may be found, unfortunately, very inefficient in practice. We may, therefore, express the delight we feel in being able to point out a very large town where the enlightenment of the civic authorities has already effected—on a smaller scale, it is true—what we recommend generally for the empire. The streets and courts, there, are built just as we think they should be built: with a population of 200,000,—in which the respectable classes are included,—55,000 of the less useful and more troublesome sort, live in courts. Cellars abound, and furnish the only homes wisely allowed to 20,000 still more helpless wretches: ther is the least possible amount of sewerage, and a complete want of drainage—privies are things the people only know of by geographical notices of other places—the scavengers do not appear, when most attentive, more than once a week; and the happy result is, that while, in over-crowded London, we get rid of only one in thirty, yearly, of our surplus population, in Liver-

* We are told, by a friend, that the Legislature has already done this.

pool they are annually delivered of one in every eighteen.* To calculate the relief, both to rich and poor, that this decimation of paupers must produce, would require a mathematician of no humble powers. Let us imagine that one court, yearly relieves the labour-market of ten candidates, and the rate-payers of as many paupers, what a variability of employment, what a saving of cash, must it cause even in a dozen years! But when we multiply that court by thousand others, with the deaths produced in that court by those produced in all the others, and then suppose these results accumulating for centuries, what a magnitude of figures have we before us! How much of hideous pauperism is removed or prevented, how much of parochial monies kept in the rate-payers' pockets. Verily, we may be alone in the opinion, but we are not disinclined to the belief that Liverpool has, without our knowledge, been for years the country's safety-valve. In the first place, thinning their pauper population so satisfactorily, it kept up an extra demand in the labour-market, which, offering a vent for the "superabundant" surplus of remoter parishes, relieved the overwhelming and perilous pressure caused elsewhere. And, in the second place, by leaving the poor's money to fructify in the rate-payers' pockets it helped to keep up that spirit of enterprising commerce by which we can still keep our head above water.

Now, one circumstance that adds infinitely to the value of this practical example is, that the Liverpool authorities had everything on the part of nature to obstruct their success. Dr. Dobson, in a paper, printed in 1774, says, "Liverpool is one of the healthiest places in the kingdom, in proportion to the number of inhabitants." Mr. Moss, in his "Medical Survey of Liverpool," more recently published, says, "The air is much more pure than it is commonly found in many parts of the kingdom:" and medical men have exhausted at once science and eulogy in pourtraying the geological reasons why Liverpool should be the healthiest of abodes. Yet, by the indomitable energies of the Liverpool authorities, have all those untoward difficulties been conquered, and Nature, herself, made tributary to the merciful policy we advocate! Honour, then, to Liverpool—the focus of commerce, the great encourager of science: its denizens are, in this path of enlightenment, as in every other, far in advance of all other English towns!

Another adjunct which exists in Liverpool, and which might be wisely extended to all other towns, is the plan of having, what are there called, dame schools. Of these they had, even in 1836, 244, with 5240 scholars, besides 194 common day schools, with 6,096 scholars. Mr. Riddall Wood, in his report, says, "the condition of most of the schools in an extensive and populous district, stretching upwards from the North Shore to Scotland Road, is wretched in the extreme, corresponding, in a remarkable manner, with that of the population. With few exceptions the dame schools are dark and confined; many damp and dirty; more than one-half of them are used as dwelling, dormitory, and schoolroom, accommodating in many cases a family of seven or eight persons; above 40 of them are cellars." "Of the common day-school in the poorer districts," (he states in another part of his Report), "it is difficult to convey an adequate idea; so close and offensive is the atmosphere in many of them as to be intolerable to a person entering from the open air, more especially as the hour for quitting school approaches. The dimensions rarely exceed those of the dame schools, while frequently the number of scholars is more than double. Bad as this is, it is much aggravated by filth and offensive odour arising from other causes." The same gentlemen notices particularly a school in a garret up three pair of dark, broken stairs, with forty children in the compass of 10 feet by 9; and where, "on a perch forming a triangle with the corner of the room sat a cock and two hens; under a stump-bed immediately beneath was a dog-kennel, in the occupation of three black terriers, whose barking, added to the noise of the children and the cackling of the fowls on the approach of a stranger, was almost deafening. There was only one small window, at which sat the master, obstructing three-fourths of the light it was capable of admitting." A brave school! conducted not on Lancaster's, but Liverpool's principles!

Now, the immediate benefits of a *system* of schools of this kind are obviously two-fold. The scholar's health is permanently undermined at a critical period, which, necessarily curtailing life within reasonable limits, saves the country the expense of the individual's protracted pauperism; and then, while the popular clamour of the age for education is responded to, the children make no real progress, from the exhaustion and langour that must overpower them in the close and fœtid atmosphere in which, we have every reason to believe, they rejoice.

Now, if we would further wish to know how much *one* house, conducted on our principles, may do. in silently turning the superfluous poor into *pabulum Acherontis*, or how far the general policy we have recommended might be safely carried out without awakening any of that religious or party enthusiasm of benevolence, which makes itself so prominent and troublesome when some antipodean savage's health, temporal or eternal, is supposed to be compromised, we may consult a little book by a crotchetty specimen of the tribe of humanity-mongers, who has recently gone to some trouble and expense in writing what (apart from its singularity) is rather an able pamphlet on what he calls the "*alarmingly*" great and increased mortality of Liverpool. This gentleman, Dr. Duncan, who has been of some use to us in this article, tells us:—

In every room of such houses, (lodging houses,) with the exception of the kitchen or cooking-room, the floor is usually covered with bedsteads, each of which receives, at night, as many human beings as can be crowded into it; and this, too, often without distinction of sex, or regard to decency. But there are cellars, usually the double cellars I have described, which are used for the same purpose; and here the overcrowding is carried still further, if that be possible, and is certainly even more prejudicial to the health of the inmates, from the still more defective ventilation of these dark and miserable abodes. At night, the floor of these cellars—often the bare earth—is covered with straw, and there the lodgers—all who can afford to pay for the accommodation—arrange themselves as best they may, until scarcely a single available inch of space is left unoccupied. In this way as many as thirty human beings, or more, are sometimes packed together underground, each inhaling the poison which his neighbour generates, and presenting a picture, in miniature, of the Black Hole of Calcutta. Each individual, in the course of the night, vitiates about 300 cubic feet of atmospheric air, rendering it quite unfit for the purposes of respiration; and if we suppose thirty pair of lungs engaged in this process, we shall have 9,000 cubic feet of air rendered noxious during the period of sleep. But the cubic contents of the cellars in question do not, on the most liberal computation, exceed about 2100 feet: which is the same thing as to say that *thirty* individuals are furnished with a supply of air sufficient for the wants of only *seven*. The Inspectors of Prisons in England recommend "not less than 1000 cubic feet" for every prisoner, "as being essential to health and ventilation," and yet here we have free agents voluntarily immuring themselves within a space which limits them to a supply of 70 feet, or less than one-fourth of the minimum necessary for the purposes of healthy respiration. I speak, of course, with reference to the imperfect natural ventilation of the cellars, aided, as this source of mischief is, by the pains taken to exclude even a breath of air from without. I have described an extreme case, but it is one which every medical man who has practised extensively among the poor, must have had an opportunity of witnessing, and I believe it may be said without fear of contradiction that there is scarcely a "lodging" house or cellar in the town, whose inmates are not, as a general rule, too numerous for the breathing space afforded them. The natural consequences follow. Fever breaks out from time to time, and spreads with rapidity among the inhabitants. Nor is this the worst; for, from the migrant character of their population, these dens become *foci* which radiate infection not only throughout the town, but to other towns, and to distant parts of the country. But the evil of overcrowding is not confined to lodging-houses. The houses, both in streets and courts, are very generally sublet, each room being sometimes occupied by one or more families: so that it is not uncommon to see an apartment ten or twelve feet square, and, perhaps still more frequently, a cellar of the same dimensions, inhabited by twelve or fourteen human beings; giving a ratio of condensation in the case of the cellar (which is lower in the roof,) very nearly as high as in the case of the worst lodging-cellars just noticed. In some districts of the town, inhabited chiefly by the lower Irish, whole courts and streets are densely crowded. Some

* The relative proportions, *including rich, middlings, and poor*, is one in every thirty-seven in London—one in every twenty-eight in Liverpool.

instances of the latter will be afterwards mentioned; at present I shall only notice a filthy, pent-up court (in Crosbie-street) containing 118 inhabitants on an area of 150 square yards, or about $1\frac{1}{4}$ square yards to each. The average breathing-room during the night for the entire population of the Court, would be little more that one-half of what it ought to be, supposing the inhabitants succeeded in their attempts to prevent the admission of fresh air to the houses. In this Court, fifty cases of Fever, (nearly one-half of the entire number of inhabitants), were attended by the Dispensary in a single year, besides a considerable number of patients with other diseases.

If any fresh hints occur to us, as promising to aid the efficacy of our plan, we shall not fail to present them to our readers in our next number. In the meantime, what we say is,—let us arrange quietly, that landlords' cupidity and negligence being allowed their natural swing, all things shall enter the course we have marked out, be then allowed as quietly to keep it, and society cannot fail to be relieved of what is admitted to be, the festering curse of all our evils—OUR SURPLUS POPULATION.

REVIEW.

Cataract and its Treatment, comprising an easy mode of dividing the Cornea for its Extraction, and appropriate means for removing the different forms of that affection. By JOHN SCOTT, Senior Surgeon to the Royal London Ophthalmic Hospital, Surgeon to the London Hospital, &c.—Churchill, 1843.

THE apparent object of Mr. Scott, in the publication of the pamphlet before us, is to make known to the profession a knife which he has had constructed for the section of the cornea in the operation of extracting a cataract, which, he conceives, will enable the operator to effect the section with ease and certainty. As it is always best, under such circumstances, to allow the author to speak for himself, we shall follow the usual custom, and accordingly quote his description :—

The introduction of a needle into the anterior chamber can always be effected without the slightest difficulty, and it can generally be retained there for a sufficient length of time to break up the texture of the lens without the escape of the aqueous humour, notwithstanding the repeated movements of it that are necessary for performing the operation. From reflecting on this circumstance, it occurred to me, that if a knife could be constructed that might be introduced into the eye with as little force as is necessary for the introduction of the needle, and could be formed of such a shape as would complete the section of the cornea without danger of wounding the iris, the difficulties and the danger attending the operation would be most materially lessened. Let it be remembered, that in the usual way of operating, the knife cuts its way *into* the cornea, which requires considerable force; whereas, upon the plan I propose, it is introduced into the anterior chamber without any further division of the cornea than is necessary for the purpose of its introduction, the section of the membrane not being commenced until both sides of the cornea have been punctured; and the knife is of such a shape and is then so situated that there is little danger of the iris falling forward before its edge.

Those who have ever performed the operation of lithotomy with the gorget, and afterwards with the small beaked knife first used by the late Mr. Blizard, and have contrasted the force necessary to make the section of the prostate gland from without inwards by means of the former instrument, with the facility with which, the latter being introduced into the bladder, the section can be made from within outwards, will readily understand the advantages that attend the mode of operating I now propose, as well as the reasoning that has led to its adoption.

The objects I propose to attain in the construction of the knife are—

1st. That it shall be of sufficient length to traverse completely the anterior chamber, and divide the nasal margin of the cornea.

2nd. That it shall increase in width and in thickness from point to heel enough only to prevent the escape of the aqueous humour in its transit across the anterior chamber, but that its width shall have no reference to the dimensions of the section that is to be made, as that circumstance, I conceive, has occasioned all the difficulty of its introduction, and the chief danger of the operation.

3rd. That it shall be of such a shape and figure, that when introduced in the middle of the temporal margin of the cornea and carried across the anterior chamber it shall readily puncture the nasal side of that membrane, and when placed in this situation the cutting edge shall be so far beyond the pupillary margin of the iris, and opposed to so large a portion of its anterior surface, as will prevent its escape beneath the edge of the knife to endanger its division in making the section of the cornea.

4th. That when the section of the cornea is thus about to be made, the edge of the knife shall be opposed only to the margin of the section on either side, and not to any extensive portion of its internal surface, whereby its division would be attended with difficulty, as is the case in using Beer's knife.

In order to attain these objects, the knife must describe a portion of a circle of larger diameter than that of the cornea; and after having tried a variety of shapes and sizes, the one I now propose seems to me to fulfil the foregoing indications the most effectually. At first I used a much narrower and finer knife, but I found that in introducing a cutting instrument of such a length, the aqueous humour was liable to escape unless it increased more rapidly both in width and in thickness. I have also tried one wider at the heel, but in that case greater force is required for its introduction, which is not counterbalanced by any commensurate advantage in completing the section, unless the cornea be of unusually large dimensions.

The back of the knife describes a sixth part of the circumference of a circle, the radius of which is ten lines. The chord of the arc formed by the back of the knife is, of course, also ten lines in length, being equal to the radius of that circle; it is, therefore, greater by four lines than the diameter of the cornea, and the blade is consequently quite long enough to complete the section of that membrane without difficulty. The knife is two lines in width at the heel, whence it gradually tapers to the point; it also increases uniformly in thickness, as well as in width, from point to heel, so as to occupy completely the aperture it makes in the cornea, for the purpose of preventing the escape of the aqueous humour.

The operation is to be performed in the following manner:—

In making the upper section of the cornea with this knife, it is to be held in the usual manner, between the thumb and two fore-fingers, the two other fingers resting on the patient's cheek, and the handle of the knife slightly inclined towards the side of the face, while the point punctures the cornea on its temporal margin; the handle of the knife is then to be brought upwards with a sweep as the blade traverses the anterior chamber; and when it has punctured the nasal side of the cornea, the handle will be nearly at a right angle with the temple. The knife is then to be carried completely across the anterior chamber: in doing this great care must be taken to press firmly downwards with the back of the instrument, so that the wound may not be unnecessarily enlarged by its cutting edge. This being accomplished, the point of the knife will have reached the nasal canthus of the orbit, and its cutting edge will be so far beyond the pupillary margin of the iris that it cannot be readily divided in completing the section of the cornea. The point of the knife is then to be carried upwards, the handle being slightly inclined in the opposite direction. The section of the cornea on its nasal side will now be complete, a small portion at the upper and outer part only remaining to be divided; and this is readily done in the withdrawing of the instrument.

In this way, the cornea being transfixed by an instrument of such a size only as will prevent the escape of the aqueous humour, no unnecessary force is employed, either in accomplishing this object or in preventing the eye from rolling inward. The section is completed, not by thrusting a wedge-shaped knife through the anterior chamber, the cutting edge of which divides the circumference of the cornea, only by the force with which its back is pressed against the opposite side of the section, but by an instrument that accomplishes the division of the membrane independently of any such pressure on its back. No unnecessary force is therefore had recourse to, and consequently spasm of the muscles of the globe is much less liable to occur; the aqueous humour is much less likely to escape; and if it should do so, the shape of the knife and its position in the anterior chamber are such, that the iris can scarcely fall forward before its edge; and even if this should be the case, it will much more readily recede behind it, under the slightest pressure of the finger on the cornea.

In addition to these advantages it may be observed, that the danger of bruising the iris, by the forcible compression of it against the knife, when spasmodic action of the muscles of the globe occurs, is also avoided, and the consequent chronic inflammation of that structure, that is so liable to be produced from this cause, is likewise obviated.

There is no difficulty in introducing the knife in the direction here pointed out; on the contrary, its passage though the anterior chamber will be accomplished with greater ease than is the case with the ordinary straight knife, for in this stage of the operation, the pressure will necessarily be made against the back of the knife, and thus the danger of dividing the cornea to too great an extent before it is punctured on the nasal side will be avoided. The pressure thus made with the back of the knife also tends to prevent the involuntary turning of the eye upwards and inwards, and the section is completed without doing any violence to the iris, or to the internal tunics of the globe.

The after-treatment will, of course, be conducted on a similar plan as if the operation had been performed in the ordinary way, and with the usual instruments. Mr. Scott seems to be averse to the system of reducing the force of the circulation, by bleeding either immediately before or after the operation has been effected; and he remarks that the indiscriminate abstraction of blood from the feeble and aged persons, who are so frequently the subjects of cataract, instead of obviating the occurrence of inflammation,—the presumed object in view,—will rather tend, by reducing the patient's powers, to prevent the closing of the section by the first intention, and thus induce the suppurative process, which will be very liable to be attended with violent inflammation of an asthenic character, that it will be very difficult, if not impossible, to control in the reduced state of the system. In the last fifty cases of extraction performed in succession at the hospital, Mr. Scott has not ever had occasion to bleed either before or after the operation. The administration of a purgative soon after the extraction, he is also unwilling to permit, lest the union of the cornea should be disturbed by the efforts of the patient; and, if possible, the food given for the first twenty-four hours at least, should be of a fluid character, as the act of mastication might displace the flap of the cornea.

The inflammation which necessarily follows the performance of the operation, may, however, proceed to a deleterious extent, induced

either by local or constitutional causes,—such as undue violence during operation, or previous inflammation, or else the constitutional powers being above or below the usual standard.

If the inflammation arise from undue violence in the operation, it will be characterized by increased vascularity in the sclerotic coat, as well as in the conjunctiva, with partial elevation of the latter from the effusion of lymph beneath it. Haziness of the cornea and dullness of the iris, with more or less pain in proportion to the activity of the inflammation, will also be attendant symptoms. It must be subdued by the abstraction of such a quantity of blood from the part as will be effectual for this object; but this can only be attained by daily unloading the vessels, either by leeches or cupping; it is not in general to be accomplished at once by sudden abstraction of a large quantity of blood. The iris has suffered a degree of violence which has set up an inflammation that cannot be cut short, but may be gradually mitigated and subdued, and conducted to a successful termination. Leeches should be daily applied in these cases in such numbers as will be productive of a gradual abatement of the symptoms. The bowels should be regulated; but if there be no constitutional excitement, general depletion is not usually required; indeed, on the contrary, it is often necessary to administer tonic medicines, and allow a nutritious, and perhaps a stimulating diet in the old people who are the subjects of this operation, when the abstraction of blood, on which you must mainly depend for subduing the inflammation, requires to be carried to the extent of reducing considerably the force of the circulation. Fomentations are also more serviceable than cold applications, and belladonna should be applied as soon as the inflammation begins to subside, to prevent the closure of the pupil. I have sometimes thought that the too early use of this application has tended to keep up the inflammation by its influence on the inflamed texture of the iris, dilating the pupil, and thus separating the adhesions too rapidly.

If the eye has been previously the seat of inflammation, as may be evidenced by synechia posterior, or by a fluid state of the vitreous humour, inflammation to a serious extent may succeed the operation, notwithstanding that it has been performed with the smallest possible degree of violence. The disease will not usually assume an active character, but it will be tedious, indisposed to subside, and difficult to control. In these cases blood must be sparingly drawn, a nutritious diet must be allowed; but the morbid disposition of the eye, on which the inflammation depends, will only be effectually corrected by a mild administration of mercury;—of course this must not be carried to such an extent as to irritate the system.

The employment of mercury under such circumstances has been objected to, from the fear that, as it checks the deposit of lymph under inflammation, it might prevent the healing of the wound in the cornea. The validity of this objection Mr. Scott is inclined to doubt.

The most frequent cause of inflammation after the operation is a morbid irritability of system consequent on want of power in the constitution, so frequently attendant on advancing years; this occasions the inflammation thus set up to exceed the degree necessary to heal the wound, renders it difficult to be controlled, and at the same time causes it to assume an asthenic character. This form of inflammation most frequently comes on about two or three days after the operation, with intense pain of a throbbing, aching character, often sudden in its access, extending deeply into the orbit, affecting the temple and the side of the head. This will be very shortly succeeded by great tumefaction of the eyelids, which assume a livid hue, and on unclosing them, as far as that can be done with safety, the conjunctiva scleroticæ will be seen to be excessively elevated by serum effused beneath it, causing it to assume a yellowish reddish hue, and the cornea will be somewhat dull and deprived of its lustre.

The sudden occurrence of the inflammation, the intensity of the pain, the rapid and extensive tumefaction of the eyelids, and swelling of the surface of the globe from the serous effusion, are symptoms of a very alarming character, and are very liable to mislead the surgeon by inducing him to suppose that the disease is of an acute phlegmonous character. The rapidity and extent of the swelling, however, show that it depends on the effusion of serum, and not of lymph, which is in itself indicative of inflammation of the opposite kind; and if active depletion be employed, and the force of the circulation thereby reduced, the irritability of the system will be proportionately increased, and the inflammation which depends upon it will be aggravated in the like degree, so that sloughing of the cornea and suppuration of the globe will probably be the consequence. The distinguishing characteristics of this form of inflammation are, that the swelling is rapid and extensive, depending on the effusion of serum and not of lymph, that the palpebræ are of a livid color, and the conjunctiva yellowish-red; the discharge is thin and trifling, the pulse quick, weak and small, and the surface and extremities usually pale and cold.

The cornea is often hazy, and the edges of the wound look tumid and of a dirty yellowish hue; but I do not think it advisable to irritate the eye by examining the state of the wound when the upper section has been made if the other characters of the inflammation are clearly developed.

In the treatment of this form of inflammation, the first thing to be done is to allay the sufferings of the patient by the application of warmth; and it is surprising what immediate relief will often be afforded by the use of fomentations, which should be continued until this object is attained, and resumed as soon as the pain recurs. This usually constitutes the only local treatment that is required, although counter-irritation by means of a blister may also be sometimes advisable.

The inflammation essentially depends on a weak and irritable state of system, and this must be immediately obviated by a decided dose of opium combined with æther or ammonia, which must be repeated as frequently as may be required to keep the patient free from irritability and restlessness, at the same time that warmth is applied to the surface of the body and to the extremities; and by the combined use of these means, the inflammation will often subside as rapidly as it supervened. Its occurrence, however, is an indication of a feeble state of the circulation, which is often induced by keeping a patient on too low a diet after the operation; and this state must be remedied by the judicious use of cordials and stimuli, both medicinal and dietetic, with the view of sustaining the powers of the system without exciting the circulation. Thus it is sometimes necessary not only to allow a nutritious diet, but also to give porter, wine or spirits shortly after an operation, according to the previous habits of the patient, regulating their quantity by the state of the circulation.

Phlegmonous inflammation of the globe is but rarely met with: if it be allowed to go on unchecked, enormous tumefaction of the eye will occur, and sloughing of the cornea will probably take place, followed (or preceded) by suppuration of the globe. Active antiphlogistic treatment, especially free bleeding, is required in this case, when, in fact, every moment is of importance. Mercury is by no means so serviceable in this form as in the preceding; and, indeed, unless the disease be arrested by the timely abstraction of blood, the eye will be lost before the system can be placed under its influence.

In those who are of a gouty or rheumatic diathesis, although the section of the cornea heal as readily as usual, after it is united the inflammation may not subside, but extend to the sclerotic coat and iris, attended with the usual symptoms and appearances of rheumatic iritis, and producing closure of the pupil if it be not arrested.

This form of inflammation usually does not occur until about a week after the operation; it is often occasioned by too great a reduction of the patient's powers, from his being restricted to a low diet for a long time; in this state the prevailing constitutional diathesis keeps up and modifies the subsiding inflammation, at the same time that it renders him susceptible of the influence of atmospheric causes. This state of things is usually connected with considerable congestion of the sclerotic coat, a debilitated state of the circulation, and a disordered condition of the mucous membrane of the alimentary canal, as well as of the rest of the digestive organs.

Cupping on the temple is usually advisable, followed by a blister at the back of the neck, with drastic purgatives and bark. Belladonna should also be applied to the eyebrow, with the view of preventing closure of the pupil. If these means be adopted at the outset of the disease, they will generally prove effectual, the patient being allowed a nutritious, not a stimulating diet, and defended from all exposure to vicissitudes of temperature. The eye must be kept closed, and all lotions scrupulously avoided, as well as fomentations, which, by wetting the eyelids, are apt to produce an injurious effect. Sometimes it may be necessary to repeat the abstraction of blood, but this must never be carried to the extent of reducing the force of the circulation, and occasionally the condition of the digestive organs cannot be corrected without a mild alterative mercurial course; but great care must be taken not to subject the system at large to the influence of this agent, or its irritability will probably be greatly increased, and the inflammation thereby aggravated instead of being relieved.

From the great length to which this review has already extended, we are prevented noticing Mr. Seo't's description of the various forms of the disease, and also his remarks on the operations for depressing and dissolving the cataract. For these we must refer our readers to the pamphlet itself, which they will find well worth their attention, and the serious consideration of the ophthalmic practitioner.

The Pharmaceutical Journal for September.

This is a more than average number. There is a good paper by Mr. R. Phillips, illustrating the present state of pharmacy. The Christian peaceableness of the druggists must be as great as the dishonesty charged on them by the worthy Professor: no other supposition can explain his non-molestation after publishing such facts as he here gives, and in the very organ of the druggists. Here is a sample:—

I sent to a Chemist a written order for ℥ss. Potassæ Hydratis; and I received from him a vial, labelled *Potassæ Hydriodas*, and containing what appeared certainly to be well formed crystals of *Iodide of Potassium*. These I intend to examine on a future occasion. Suspecting that this mistake occurred in consequence of writing *hydras* in the genitive case, I again sent to the same Chemist for hydrate of potash, but determining to throw no obstacle in the way so as to prevent his understanding what was really wanted, I wrote for ℥ss *Potassæ Hydras*, and this I actually received, or at any rate I obtained a substance intended for it, and it was labelled Potassæ Fusa. My suspicion of the cause of the mistake in the first instance, was thus fully confirmed. Having this preparation in my possession, I thought I might as well examine it; though I confess, after what I have stated as to the impurity of carbonate of potash, from which it is prepared, I could hardly hope that its purity would be great. In the first place the cylinders were of a dirty brown colour, and of a very rough and cracked surface. In order to examine the state of its purity, the following experiments were performed:—105 grains were submitted for a short time to red heat, in a platina crucible, by which they lost 13 grains, amounting to 12.3. per cent.; 150 grains were put into distilled water, and there remained, insoluble in it about six grains, which, from the colour, evidently consisted for the most part, if not entirely, of sesquioxide of iron; to the solution after it had become clear by subsidence, sufficient water was added to make it up 20 fluid ounces; of these eight

fluid ounces were saturated with nitric acid, and gave, on the addition of solution of nitrate of silver 1. 7 of chloride of silver; the whole quantity would, therefore, have yielded 4. 25 grains of chloride, denoting 1.06 of chlorine, probably in combination with potassium, and if so, indicating about 1.5 per cent of this salt. This, therefore, on account of the smallness of its quantity, is an unimportant admixture; six ounces of the solution, also after saturation with nitric acid, gave, on the addition of chloride of barium, 8.1 grains of sulphate of barytes, equivalent to 27 grains of sulphate, for the whole quantity; and indicating the presence of very nearly 14 per cent. of sulphate of potash in the hydrate of potash; lastly, to four ounces of the solution of 150 grains of the potash in 20 of water, lime-water was added in excess, the precipitated carbonate of lime collected, washed, and dried, weighed eight grains, equal to 40 grains, for the 150 of potash, or 26.6 per cent., and indicating 37.2 per cent of carbonate of potash.

Estimating the whole of this compound to be pure hydrate of potash, which has not been shown to be actual impurity, it will appear that it consisted of, very nearly,

Water	12.3
Sesquioxide of Iron	4.0
Chloride of Potassium	1.5
Sulphate of Potash	14.0
Carbonate of Potash	37.2
leaving for Hydrate of Potash	31·0
	100

Of this preparation, therefore, nearly 70 per cent was impurity.

To ascertain whether any other Chemists would mistake *hydratis* for *hydriodatis*, I sent to three parties directions for gr. xl. potassæ hydratis to be dissolved in 2 oz of water. From one of them I received a solution which was pretty clear, alkaline to turmeric paper, contained only a little peroxide of iron, rather small quantities of carbonic acid, common salt, and sulphate of potash; in this case, therefore, it was evident that my directions had been understood.

The second solution was also alkaline to turmeric paper, and had evidently been prepared with hydrate of potash of about the same quality as that of which the analysis is given above: it contained much carbonate, and sulphate of potash, and chloride of potassium; on standing it deposited much sesquioxide of iron; for the presence of this last substance, the Chemist accounted by saying, *that the potash was decomposed during the operation of the heat.*

The third solution was not alkaline to turmeric paper, and thus finding that it had no alkaline reaction, I added a portion of it to a solution of bichloride of mercury, when I immediately obtained the well-known bright red coloured precipitate, which indicates the presence of biniodide of mercury. This Chemist then, like him already mentioned, read hydriodatis, instead of hydratis, and I consequently obtained a solution of iodide of potassium, instead of hydrate of potash.

He tries distilled water, nitrate of silver, and sulphuric ether, with similar results. Believe Mr. Phillips, and no drug is given as asked—or, if given, is not given pure. The following are translated papers of some value:—

Merck's Process For Detecting Small Quantities of Opium.

In the analysis of Bengal opium, which is not yet introduced into the market of Germany, although it belongs to those specimens of opium which are very rich in alkaloids (containing, viz., eight per cent of morphia, three of narcotine, one-half of codeine, and one per cent. of the baine.) E. Merck discovered, five or six years back, a peculiar resinous vegetable substance, soluble in alcohol and ether, and assuming a red or purple colour when heated with diluted muriatic acid, and thence called porphyroxine.

Merck convinced himself that porphyroxine is present in other varieties of opium, and offers a ready means for detecting the latter where it exists in very small quantities, or in compounded medicines. His recent experience on this substance was communicated at the general meeting of the Union of Apothecaries in the Archdukedom of Hesse, on the 20th September 1842.

As the subject is not without interest, we extract the following observations from Merck's former paper, (*Ann der Pharm*, Band xxv., S. 201).

"In treating powdered opium with boiling ether, we obtain, on evaporation, a fatty glutinous residue, with crystals of meeonine and narcotine. The codeine, thebaine, and morphine are scarcely soluble in ether, because these alkaloids exist in the form of salts. If the oily resinous extract of opium, prepared with ether, be treated with boiling water, the meconine is dissolved, and the narcotine may be procured in solution by alcohol; but in the latter solution the porphyroxine will be contained, which on evaporation of the alcohol, will remain as a resinous residue; and if boiled with hydrocholoric acid, in which it is dissolved, together with the meconine, will assume a purple colour.

"Porphyroxine has the following properties; it crystallizes in the form of shining needles; is perfectly neutral; produces an olive green colour with concentrated sulphuric and nitro-sulphuric acids; is dissolved by diluted sulphuric, muriatic or nitric acid; and produces at the boiling point a purple or rose colour, according to the concentration of the solution.

"Alkalies discolour the fluid, and yield a white precipitate. Acids of every description, even acetic acids, reproduce, with this precipitate, the red colour at the ordinary temperature. The purple muriatic solution yields a carmine precipitate with tannin and the salts of tin. A solution of gold gives a dirty red, sugar of lead a rose-coloured precipitate; chloride of iron produces a brown precipitate, and the red colour totally disappears; the sulphate of copper does not alter the red colour.

"Porphyroxine is soluble not only in diluted acids but in alcohol and ether, without any discolouration. Alkalies precipitate this substance, from an acid solution as a copious loose mass, which melts on being heated to a resin, and on cooling becomes friable.

"To detect opium in a compounded medicine or mixture, the fluid is first to be decomposed by potash, and shaken together with ether. A strip of white bibulous paper is to be repeatedly moistened with this etherial solution; drying it after each time of moistening. If the paper be now wetted with muriatic acid, and exposed to the vapour of hot water, it will become more or less red, if opium be present.

"In conclusion it must be remarked, that porphyroxine is soluble in acetic acid, but is not reddened on the application of heat; further, that it is, like all resinous substances, insoluble in water, consequently does not exist in an aqueous extract of opium, and very little of it will be contained in a vinous tincture of opium."—*Repertorium fur die Pharmacie, by Dr. Buchner Zweite Reihe*, Band xxxi, Heft i, page 104-108.

On the fatty matter contained in beer.—By Dr. Vogel, jun., of Munich.

Beer belongs to those substances which exert a considerable influence over the formation of fat in the animal body, although the actual quantity of fatty matter which it contains is very small.

By the evaporation of beer there is obtained a brown glutinous residue. This was dried at 212° Fahr. by a water-bath, and then pulverized. The powder repeatedly digested in ether yielded a yellow oily fat, with a peculiar odour, resembling malt, and which may be collected in drops by evaporating the ether. With alkalies, it forms soluble soaps, and leaves a fatty stain on bibulous paper. Under the microscope the fatty globules are distinctly visible. As regards the quantity, three different experiments gave in 100 parts of extract 0 1605 of substance soluble in ether. One quart of Munich winter beer yields, by evaporation, 18 ℥ of extract; consequently, in one quart of beer 1.728 grains of fatty matter are taken into the system. If, therefore, an individual drink two quarts daily, he would, according to this calculation, receive in the course of a year only 2½ ℥ of fatty matter—a quantity which by no means corresponds with the well-known increase of corpulence in habitual beer-drinkers. We must, therefore, look for the fattening quality of beer in its other constituents, as Professor Liebig has observed in his theory of the formation of fat in animals.—*Annalen der Chemie and Pharmacie, Band.* xlvi., *Heft.* 2, *May*, 1843.

The original articles consist principally of remarks, by the editor, on the present state of the body of druggists, and short communications of correspondents: of the last we append a few. The first is by Professor Christison.

Fluid extract of senna.

Take fifteen pounds avoirdupois of Tinnevelly senna, and exhaust it with boiling water by displacement: about four times its weight of water is sufficient. Concentrate the infusion in vacuo to ten pounds; dissolve in the product six pounds of treacle previously concentrated over the vapour bath, till a little of it becomes nearly dry on cooling; add twenty-four fluid ounces of rectified spirit (dens. .835); and, if necessary, add water to make fifteen (16 oz.) pints—the object being that the preparation shall be of such strength that every fluid ounce shall correspond to one avoirdupoise ounce of senna. Mr. Duncan, of Edinburgh, generally makes eighty pounds of senna into this extract in one operation, The numbers given are those by which he worked in the first instance. The dose is two drachms for an adult; it very rarely causes griping. It tastes precisely like treacle, and the absence of disagreeable taste is owing to the fact that pure senna has but a feeble mawkish taste, which treacle easily covers.

Milk of roses.

℞ Amygdalarum Dulcium, lbss.
Aquæ Rosæ, Oiv.
Ceræ Albæ.
Saponis Albi (Windsor)
Olei Amygdalarum, ana ʒvj.
Spiritus Vini Rectificati, ℥xij.

Misce, secundem artem. Adde Olei Lavand. Rosæ, &c. &c., quant. suff, ad captandum.

Granulated cold cream.

White wax.
Spermaceti, of each 1 oz.
Almond oil, 3 oz.
Otto of rose as much as you please.

Let the wax and spermaceti be dissolved in the almond oil, and when a little cool, pour the mixture in a large Wedgwood mortar previously warmed, and containing about a pint of warm water. Stir briskly until the cream is well divided, add the otto, and suddenly pour the whole into a clean vessel containing eight or twelve pints of cold water. Separate the cream by straining through muslin, and shake out as much water as possible.

We have but one remark to add on the monthly pharmaceutical magazines. They are too dear. In the present day, even scientific literature must not want the attraction of giving a "good pennyworth." For magazines, containing not more than one of our own Numbers, a shilling is too much. It is to the interest of science that its journals—its greatest adjuncts—should be within the reach of as large a number as possible.

A Practical and Theoretical Treatise on the Diagnosis, Pathology, and Treatment of Diseases of the Skin, &c. By Erasmus Wilson, Esq., &c.

The admirers of Shakespeare who would catch a true notion of his character, are desired by Ben Jonson to look,

"Not on his picture, but his book."

Mr. Erasmus Wilson, though not bearing possibly as severe a test as the great bard, may yet not be dissatisfied if, in his position as a professor of surgery, he be taken as no higher than this work represents him. As a practical guide to the classification, diagnosis, and treatment of diseases of the skin, the book is complete. We know nothing, considered in this aspect, better in our language: it is a safe authority on all the ordinary matters which, in

this range of diseases, engage the practitioner's attention, and possesses the high quality—unknown, we believe, to every older manual—of being on a level with science's high-water mark. Here, we hope, the analogy between author and book ceases, for further than this our encomium cannot travel. Of Mr. Wilson's capabilities as a literary workman, or reading companion, we are sorry to say the work before us gives us but a very *so-so* opinion. His style is inflated—awkward—prolix. His sentences are coarsely cobbled together, and frequently involved, and he is perpetually expressing common ideas by novel terms, which are generally ungraceful, and not unfrequently incorrect. He writes, indeed, in a manner which while having neither the polish nor grace of a poetic, the sustained harmony of a rhetorical, nor the simple brevity of a scientific style, has yet the characteristics and faults of all three jumbled together, in a way anything but pleasing to the cultivated taste. Here is the very first sentence of his preface :—

Honour to the talents and industry of our eminent countryman, Willan—the classification of Diseases of the Skin is the most perfect in Medical Nosology. Willan, it is true, received the idea of his system from his predecessors, and especially from Plenck, but his labours *towards* the *perfection* of that idea rendered the classification to which it gave birth his own. With a *ray* of fortune rare in the *days* of human discovery, Willan saw his system accepted by his brethren of the Profession *with approbation.* He was equally fortunate in the privilege of *reposing* his labours in the friendly hands of Bateman, a physician no less distinguished for moral and religious principle than for learning and research. Since the grave *has* closed over the labours of Bateman, the *culture* of diseases of the skin in this country, as a distinct branch of medical science, has *slept.*

This is doubtless meant to be fine writing. It reminds us of Dr. Goldsmith swaggering about the tavern with a peacock air, and calling his companions' attention to his new plum-coloured coat. We are not told that that inimitable writer ever made such a fuss about his pleasing poetry, his fascinating writings. He was rich there—but he was poor in plum-coloured coats. Pretty words and soaring thoughts are Mr. Wilson's plum-coloured coats; and he must needs shew them at any price in a treatise on skin diseases. "Honour to the talents and industry of our eminent countryman, Willan."

Quid dignum tanto feret hic promissor hiatu?
Parturient montes, nascetur ridiculus mus.
Quanto rectius hic qui nil molitur inepte?

Whether "honour" be something wished Willan, or Willan and it, are treated as one and the same thing we are not told. If Mr. Wilson peruse Reid or Dugald Stewart, he will find that an "idea" is not one of those things which is given to us first piecemeal, then "especially" by Plenck, and afterwards *laboured* into perfection; and will, on his own single reflection, perceive that Willan might have seen with rays, but not with rays of fortune, and that it is something of an anti-climax to narrate that, through good fortune, a discovery was accepted by a man's professional brethren, and then append—with approbation. The tense is clearly wrong in the verb which so graphically records the exertions of the grave: *repose* is not an active verb—and the "sleep of culture" is a nice specimen of poetic bathos. In the very next sentence, in which he narrates the adoption of Willan's system by foreigners, we have, "I shall be forgiven by those whose pulse beats with (what?) national freedom, for expressing my satisfaction *in* so flattering a mark of distinction bestowed by enlightened men on the mental *prowess* of our *land.*" We are not sure that he will be forgiven, unless he express his satisfaction in something more like our "national" language. We have dwelt the more on these faults, because it cannot be too well impressed on the race of medical book-makers that the ambitious style of writing is extremely dangerous. We will not say that, even in science, there are not occasions in which a subject may receive both force and charm from the almost poetic elevation of an author's manner. But these occasions are not numerous, and can never occur, except to a mind of more than ordinary grasp, and with something of the imaginative temperament as a natural endowment. Perhaps the best instance we can cite of this is to be found in our papers of Raspail, in which the most rigid precision of reasoning and expression is conjoined with an ennobling amplitude and elevation of manner. The style, however, that peculiarly belongs to science, is one which more resembles her character and aim. The medical-practice writer's purpose is more to instruct than to please, more to be useful than to delight—or rather, we secure the less important end, by securing, first, the more important object. We have to deal with the plainest matters of fact, which ordinarily call for as little use of the fancy, or play of the feelings, as a problem in mathematics; and our task is best done when we have said what we have to tell in the shortest and most unpretending language which will convey it clearly. When simple narrative or plain demonstration is disfigured with attempts at fine writing, the judicious reader's feeling is not one of admiration, but disgust. Interest is lost in an attention distracted from good sense to bad taste. We never meet such a personage but Horace's beggar, with a fine patch on an old garment, is recalled to our memory.

Another of Mr. Wilson's faults—he will be the better for being told of it—is the offensive egotism spread throughout the book. It does him great injustice: it makes him less than he really is. We will give a few passages, taken almost at random :—

Another question, arising out of the composition of this sub-group, *I must* not pass over in silence; *I allude* to the *violence* which *I* may appear to have done to the system of Willan, in associating together in the same rank diseases from no less than three Orders of the Willanean classification. *I conceive* myself warranted in this *ravishment,* not only by practical considerations, which *have a right to enforce* a classification of affinities, and to require to be placed in the same category, diseases so closely allied as the eruptive fevers; but also in virtue of opinions *which I have long* entertained relatively to these diseases, and which *I see no reason* to reject, even though they be the subject of the following severe judgment at the pen of a recent excellent writer. * * *

By careful examination, *I* have succeeded in distinguishing the muscular fasciculi (of the Acarus Folliculorum) which move the legs, and a broad œsophagus. In the abdomen, *I have* traced also the outline of an alimentary canal, and have seen it terminate by an infundibiliform extremity at the anus. The transparent cell-like organs seen in the abdomen of the perfect animal *I regard* as dilatations or convolutions of the alimentary canal; and a dark brownish mass in the commencement of the abdomen *I consider* to be the liver. *I have* been unable to discover any sexual differences in the numerous examples which I have examined.—*I have* before remarked, that *I* entertain a somewhat different opinion to that of Dr. Simon, in relation to the forms assumed by the animal during its progressive stages of development. But this is a question which *I* must reserve for the present, *as I* am now engaged in researches which may possibly throw additional light on the structure and habits of the animalcule. * * *

I am indebted to Sir James Clark for the opportunity of noticing the researches of Dr. Bennett. My preface was already in the hands of the printer before I was made aware of Dr. Bennett's labours. * * * * *

By a stroke of good fortune, I have been in possession of an excellent opportunity of investigating this somewhat rare disease (molluscum) during the present year. In *my case,* a whole family was affected with the molluscous tumours. They are now well, with the exception of the mother, who has a single well characterised tumour, of medium size, near the outer canthus of the eyelid. *I have* requested her to let it remain so long as it gives rise to no serious inconvenience, with the double object of giving it every opportunity of diffusing its cytoblasts, if it have the power; and of supplying *me* with its impacted cells for microscopic examination. *I trust* that it is needless *for me* to affirm that *I would* not expose a family to the risk of contagion, if *I* believed in the possibility of such an event; but molluscum, *I repeat,* is not contagious.

We can readily imagine that much of this endless egotism comes out in the endeavour to claim due attention to his own personal achievements. But independently of an air of empiricism about this endless and unnecessary conjugation of the first person singular of all the verbs our worthy author can meet with, (a circumstance which ought to make respectable medical writers very chary about it), this squeamish anxiety suggests a very unfavourable inference on the value or affluence of the deserts so offensively *promenaded,* and engages us in ill-natured enquiries which cannot be of much utility to one of the varied practice and ubiquitous labours attributed to Mr. Wilson. Who, for example, would have known how much Sir James Clarke stands above the author, if the latter, in the quotation, had not *vi et armis,* so resolutely dragged the proof of a speaking acquaintance into his book. Who, again, would have thought it worth notice that all Mr. Wilson's experiments or investigations if ever at all worth a mention, were but the repetitions of those already recorded, if he did not so carefully and prominently narrate his experience, and draw such especial attention to the immaterial differences between his and other's researches. But, enough—and let us hope that what we have already said will not be wholly without effect in recommending to young writers and experimentalists that greater manliness of character, and truer fidelity to science, by which the public will be spared, in a medical book, those frequent obtrusions of honouring acquaintanceships, and offensive vindications of those petty results of a lukewarm study, which have been already anticipated by some wider discovery, and which, if new, and worthy of registry, can, if *alone,* only cast contempt on him who is needy enough to make them the subject of boastful claim.

Despite all defects, however, of this minor and personal kind, the book, as we have said, is a sound book of practice, and as such has our recommendation.

Puerperal Peritonitis.—Dr. Lee says, that a great proportion of the women—above one half—were attacked on the second and third days after delivery, and that in most of them, where the disease proved fatal, the symptoms occurred in the following order:—rigors, uterine pain, suppression of the lochia, headache, tenderness and distention of the whole abdomen, vomiting, diarrhœa, delirium, and cessation of pain before death. This summary is drawn by him from an important series of tables illustrating the subject.

Intermittent Asthma.—M. Simon has described several cases of intermittent asthma, cured by the sulphate of quinine in a short space of time.

The Faculty of Reproduction.—As regards the faculty of reproduction, women seem to occupy a place intermediate between female animals which have seasons of heat or rutting, and those which are always capable of fecundation, from the mere orgasm excited by coition, without other preparation on the part of nature. Their nature, however, approaches more nearly to the former class, very few, indeed, becoming pregnant after sexual intercourse at a distance from the menstrual period, conception, in most women, dating from intercourse during, or immediately before or after, menstruation.

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THOMAS GRAHAM, Dean of the Faculty.
CHAS. C. ATKINSON, Sec. to the Council.

August, 1843.

The Lectures to the Classes of the Faculty of Arts commence on the 16th October.

The Junior School opens on the 25th September.

HOSPITAL FOR CONSUMPTION AND DISEASES of the CHEST, near the Royal Hospital, Chelsea.

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Dr. J. Forbes, F.R.S., F.G.S., &c.
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Physicians.
Dr. Hamilton Roe, Senior Physician to the Westminster Hospital.
Dr. W. H. Walshe, Professor of Pathological Anatomy in University College, &c.

Visiting Physician.
Dr. Theophilus Thompson.

Notice is hereby given, that, in pursuance of a resolution passed at the last Quarterly Court of the Governors of this Charity, a limited number of Pupils will be admitted to the Practice of the Hospital, on and after the 1st of October next.

The Hospital contains at present Twenty Beds, and the number of Out-Patients in attendance is very considerable. Each of the Physicians (Dr. Roe and Dr. Walshe) visit three times weekly. Clinical Lectures will be occasionally delivered.

Further information may be had, by personal or written application to the Secretary, at the Office, No. 20, Great Marlborough Street.

By order,
OSBORN P. CROSS, Sec.

August 23, 1843.

WESTMINSTER HOSPITAL. SESSION, 1843—4.

The Lectures will commence on October 3rd, when the Introductory Address will be delivered by Dr. Kingston, at two o'clock.

Anatomy and Physiology; Dr. Hunter.
Descriptive and Surgical Anatomy; Dr. Hunter, and Mr. Pennell.
Chemistry; Harman Lewis, M.A., Trinity College, Cambridge.
Materia Medica; Dr. Basham, Physician to the Hospital.
Medicine; Dr. Hamilton Roe and Dr. Kingston, Physicians to the Hospital.
Surgery; Benjamin Phillips, F.R.S.
Midwifery; Dr. Andrews,
Medical Physics; Charles Brooke, M.B., Cantab.
Forensic Medicine; Dr. Frederic Bird and William Hodges, Esq., Barrister-at-law.
Botany; Dr. Basham and Dr. Frederic Bird.
Practical Midwifery; Dr. Andrews.
Comparative Anatomy; Dr. Hunter.
A Course of Lectures, illustrative of some of the more important points in Surgery; by G. J. Guthrie, F.R.S., and F. Hale Thomson, Esq.

CLINICAL LECTURES ON

Medical, Surgical, and Obstetric Cases, are delivered throughout both Sessions.

*** Perpetual Pupils of the School are eligible as Candidates for the offices of Resident House-Surgeon, and of Resident Clinical Assistant to the Hospital, with board and Apartments free of all expense; as also for the offices of Assistant House-Surgeon, and Clinical Clerk. Pupils of the Hospital, and not of the School, are also eligible as Candidates, but their election is subject to the payment of 80 Guineas for the office of House-Surgeon, and 40 Guineas for that of Clinical Assistant.

In addition to the Prizes given in the respective Classes, others will be awarded by Mr. White and Mr. Guthrie.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—Session 1843-44, commencing Monday, October 2:—

Theory and Practice of Physic—Dr. Macleod.
Theory and Practice of Surgery—Mr. Hawkins and Mr. Babington.
Clinical Medicine—Dr. Seymour and Dr. Nairne.
Clinical Surgery—Mr. Hawkins and Mr. Babington.
Anatomy and Physiology—Mr. Tatum and Mr. Hen. Jas. Johnson.
Descriptive and Practical Anatomy—Mr. H. J. Johnson and Mr. Henry Charles Johnson
Materia Medica—Dr. Nairne.
Midwifery—Dr. Lee.
Medical Jurisprudence—Dr. Page.
Botany—Dr. Dickson,
Chemistry—Mr. Brande and Mr. Solly.

A Course of Lectures, illustrative of some important Parts of Surgery, will be delivered gratuitously to the Pupils of the Hospital, by Sir Benjamin C. Brodie, Bart.

The Introductory Address on the opening of the Hospital School, for the Session 1843-44, will be delivered on Monday, October 2, at One o'Clock, p.m., in the Theatre of the Hospital.

Further particulars and Prospectuses may be obtained by applying to the Porter of the Hospital; to the porter of the Hospital Museum; or at the Anatomical Theatre, in Kinnerton-street, Wilton-place.

WINTER SESSION of LECTURES on OBSTETRIC MEDICINE.—Dr. JOHN H. DAVIS, Physician to the Royal Maternity Charity, will commence his Winter Session of Lectures on the Principles and Practice of Obstetric Medicine (recognised by the Examining Boards) on Monday, October 2nd, 1843, at his Residence, 17, Russell Place, Fitzroy Square.

The Lectures will be illustrated by a Museum, a Series of Diagrams, and by a well-adapted Apparatus (as designed by his late Father, Professor Davis), upon which the various Operations of Midwifery will be fully taught.

Fees:—For the Session, £3. 3s.; Perpetual, £5. 5s.

ST. BARTHOLOMEW'S HOSPITAL.—MEDICAL SCHOOL.—Winter Session, 1843, commencing October 2d.

LECTURES—

Medicine—G. Burrows, M.D.
Surgery—William Lawrence, F.R.S,
Descriptive and Surgical Anatomy—F. C. Skey, F.R.S.
General and Morbid Anatomy and Physiology—Mr. Paget.
Superintendence of Dissections—Mr. M'Whinnie and Mr. Ormerod
Chemistry—Mr. Griffiths.
Materia Medica and Therapeutics—G. L. Roupell, M.D. F.R.S.M.
Midwifery and Diseases of Women and Children—E. Rigby, M.D. F.L.S

Summer Session. 1844, commencing May 1st.

Botany—F. J. Farre, M.D. F.L.S.
Forensic Medicine—W. Baly, M.D.
Practical Chemistry and Natural Philosophy—Mr. Griffiths.
Comparative Anatomy—Mr. M'Whinnie.
Midwifery, &c.—E. Rigby, M.D. F.L.S.

CLINICAL LECTURES.

On Medicine by Dr. Roupell and Dr. G. Burrows.
On Surgery by Mr. Lawrence and Mr. Stanley.

COLLEGIATE ESTABLISHMENT.—The Governors of the Hospital having resolved to establish the Collegiate System in connection with the Medical School, several houses within the Hospital walls have been lately fitted up for the residence of a certain number of students, and under the direction of the Treasurer and a Committee of the Governors, every arrangement has been made which appears likely to promote the interests and comfort of the students.

The superintendence of the establishment has been entrusted to Mr. Paget, the Resident Warden.

Further particulars, in regard to every department of School, may be obtained from any of the Medical or Surgical Officers or Lecturers, or on application at the Anatomical Museum, or the Library.

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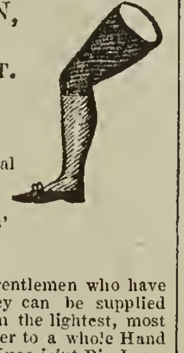

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DR. T. S. HARRISON, Member of the Royal College of Physicians, will commence his LECTURES on the Anatomy and Physiology of the Female System, the Theory and Practice of Obstetricy, and the Diseases of Woman and Children, at the Charlotte-street School of Medicine, on Tuesday, the 3rd of October, at 4 p.m.

Apply to Dr. Harrison, 14, Gower Street, or at the Charlotte Street School of Medicine.

MEDICAL CLASSES.

DOCTOR WATERS, M.R.C,S., (late Demonstrator of Anatomy at the Royal College of Surgeons, Ireland,) continues to give private instruction to gentlemen preparing for the College of Surgeons, and other medical examinations, in all the requisite branches of Medicine and Surgery. Dr. Waters meets his classes four times daily at his residence, 38a, Howland-street, Fitzroy-square, and has, at present, vacancies for in-door pupils.

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PATENT ACCELLEROPŒDO BOOTS.—J. W. BARRIER, late of 22, Burlington Arcade, having removed to larger premises, 84, Quadrant, Regent Street, Accelleropœdo House, begs to inform the Nobility, Gentry, and the Public, that in consequence of the New Tariff, he is enabled to offer his superior Boots at the following Reduced Prices—French or English make to order—Prime Wellingtons, 21s.—Weltingtons, First Style, 24s.—Patent Leather Dress Wellingtons, 30s. to 34s.—Persian Dress Short Wellingtons, 21s.

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THE MEDICAL TIMES.

A Journal of English and Foreign Medicine and Medical Affairs.

No. 209. Vol. VIII. LONDON, SATURDAY, SEPT. 23, 1843. PRICE FOURPENCE. Stamped Edition 5d.

For the convenience of Subscribers in remote places, the Weekly Numbers are re-issued in Monthly Parts, stitched in a Wrapper and forwarded with the Magazines.—Orders for the Stamped Edition [10s. 10d. per half-year, Post free in advance,] are received by any Bookseller or Newsman, or may be directed to J. A. Carfrae Esq., at the Medical Times Office, (late Lancet Office), London.

SUMMARY.

COURSE OF LECTURES ON THE THEORY AND PRACTICE OF MEDICINE.

Delivered by C. J. B. WILLIAMS, M.D., F.R.S., Professor of the Practice of Medicine, and of Clinical Medicine, at University College.

I was speaking yesterday of the physical signs of hepatisation of the lung, and was alluding to the sound in liquid effusion as being duller in the lower part of the chest, than in consolidation. A little higher up the sound is not so dull, inasmuch as it is distributed through the tubes of the lung. In hepatisation, the dullness on the affected side is almost perfect, though not so perfect as in pleurisy. In the higher parts of the chest, you get some of the tubular sound, detracting from the amount of deadness and dullness. Besides this, there is the sound of resistance. Then, what sounds of respiration shall we have?—how will this function be modified? We cannot have the vesicular respiration; the texture is blocked up, and no air passes in and out; but if the consolidation be only partial, we may still hear the crepitation from the adjoining parts, and the sound is sometimes, in this way, transmitted through a considerable portion of the lung. We also have bronchial respiration greatly developed in these cases, particularly where the disease affects the lung over the large bronchi. We then get the loud bronchial sound over those regions where the bronchi are large; and over the smaller bronchi, you have the voice transmitted with a tubular note, arising from the small size of the tubes, which give the acute notes better than the others. You hear almost the natural character of the voice in the upper region of the lung, attended with a peculiar vibration. The hand, when placed over the lung, on the diseased side, shakes, the vibration is so intense. This peculiar vibration, connected with consolidation of the lung, is obviously very much greater on the affected side, than it is on the natural side. This is the rule, but you will find that peculiar circumstances may interfere with it, circumstances which you find out if you only attend to the subject. Naturally the tubes should be free, but when loaded with secretions, it is obvious that the sound will be modified, and, in some cases, no sound at all can be transmitted through them. Very frequently, a quantity of mucus accumulates in the bronchi, and consequently there may be no bronchial respiration, the reason being that, in hepatization, the tubes, which are the seat of respiration, are blocked up. If you desire a patient, affected with bronchophony, or any other peculiar phenomena of the voice, to cough or expectorate, he cannot do so with any degree of facility, a fact which is dependant on the consolidation of the tissue of the lung, which thus interferes with the free play of this organ.

Now, you see, there are some particulars that enable you to distinguish this disease from pleurisy. I have mentioned the reason why the dullness is not so extensive. There are, however, exceptions to this. As the disease advances, in pleurisy, the œgophony dies away, and is more and more reduced, until at last it ceases altogether; whereas, here, as the disease advances, the loss of voice is more and more complete, except under the circumstances to which I before adverted, namely, where the tubes are entirely blocked up and consolidated. The motion of the chest is stopped, not by the accumulation increasing more and more, as in the case of liquid effusion, but by the lung becoming no longer compressible.

Now, when inflammation is confined to the plexus of vessels and the interstitial texture of the lung, it produces a more uniform kind of consolidation; on the other hand, when it extends to the air cells, causing a considerable deposit within their cavities, it produces the granular form, in addition to that exhibited in the vascular plexus.

We have considered pneumonia in its first two stages, both with respect to its symptoms, as well as its pathology, and we now come to consider the next stage of the inflammation—the yellow stage, or purulent infiltration. Now, we must recollect that all cases do not go on to this stage, even if they continue for a long time. Some cases pass readily into a state of suppuration, and some, again, appear to pass at once from the first into the third stage. In most cases, hepatisation is the intermediate state, and sometimes it may subsist for a long time. Hepatisation continuing, the disease is apt to take the chronic form of consolidation, and the deposits become organised into a new kind of structure, of which we shall afterwards speak. With respect to the anatomical appearances of the third stage, there is a change chiefly in the colour of the lung. I have mentioned, that in the second stage, or that of hepatization, the colour becomes redder, particularly in the congestive state. It afterwards becomes of a pinkish hue from the quantity of lymph that is deposited in the tissues. In the third stage, or that of purulent infiltration, you find there is a still paler tint, diffused through the whole texture, and this often exhibits the yellow colour of pus. Remember that there is another characteristic of pus, besides its paleness of colour; there is its opacity. In the hepatised lung, there is a sort of dull semi-transparency. As the disease advances, the quantity of pus increases. In some cases, it is obviously suffused throughout the dilated cells, which exhibit a kind of milky fatness. In suppuration, generally speaking, the pus is diffused, or infiltrated, through the whole of the cellular tissue; it is not usually collected together as in an abscess.

The diffusion is greatly assisted by the peculiar action of the air cells and the tubes, in the function of respiration. In other cases, we have good reason to believe that the suppuration does not extend to the air cells, but is confined to the interstitial texture. I have spoken already of the chief seat of pneumonia. It is sometimes in the interstitial texture, and the inter-cellular plexus of the vessels, and extends sometimes into the air-cells themselves. Dr. Stokes mentions a case in which the suppuration affected the vessels; and he describes a case of suppuration or yellow hepatisation, in which the bronchi and branches of vessels could be taken out entire. That is a case of suppuration having destroyed the vesicular texture. I call this inter-vesicular, in contradistinction to the granular form. Sometimes we find that the pus is collected together in masses, or in circumscribed abscesses; and this usually takes place when the inflammation is rendered more intense in one part of the lung by some local irritating cause, such as tubercles; or sometimes, it arises from inflammation caused by poisonous matters taken into the system. We have seen a great number of very curious cases of abscess of the lungs—secondary abscesses—from the drawings of Cruveilhier which are considered very fine specimens. Cruveilhier considers inflammation to be caused by irritating matters taken into the system: poisonous matters wandering about in the circulation, and thus producing inflammation in the great organs, the lungs and the liver; and when inflammation is set up, we have what has been termed suppurative phlebitis. On this point, Cruveilhier made some experiments, to show that irritating matters may be injected into the vascular system, and thus produce abscesses, particularly in the lungs and the liver. For instance, mercury injected into the veins was followed by disease of the lung; and on opening the body of the animal on which the experiment was made, a small abscess was found, and in the centre of this abscess a globule of mercury. Now, inflammation of this kind is sometimes called purulent, and also globular, because it is circumscribed by the inter-cellular texture, or tissue, which subdivides the vesicular texture into globules; and this is the form which this kind of pneumonia generally assumes. But we find that there is a globular pneumonia occurring independently of this. It is very common in children, in connexion with hooping cough, and is one of the serious complications of that malady. Sometimes it occurs with lesions which you cannot very well understand in the adult; and under these circumstances particularly, the inflammation is apt to terminate fatally.

The symptoms of the suppurative stage of inflammation are uncertain. The general symptoms are, prostration and weakness, with quickness of pulse, the patient being altogether extremely ill, and a kind of hectic fever. The dyspnœa rarely continues; and it is remarkable, in cases of suppuration, how little the patients complain of this symptom. Sometimes there is a false calm produced, after the struggles of difficult breathing occurring in the early stage. The cough is not troublesome. The expectoration is sometimes purulent, but this is not by any means invariably the case. In many instances, it is merely mucous, or muco-purulent; while, sometimes, it exhibits the peculiar rusty character, which indicates the continuance of the inflammatory stage in some part of the lung. This is not, however, a very common form. In many instances, in this stage, the expectoration is suppressed. The signs and symptoms which should be further noted, are, besides this state of calm, usually a great amount of weakness, almost amounting to collapse: the features appear sunken and pallid, and rigors also take place. The pulse becomes weak and thready, and the patient seems to die rather from exhaustion or asphyxia; delirium is also a frequent concomitant. The physical signs of this state are equivocal. Pus is generally secreted in the small tubes, though it does not appear to be secreted in the large ones; hence the crepitation, or rather muco-crepitation, which accompanies this condition of the lung. The bubbling sound is indicative of the presence of liquid in the middling-sized tubes: this becomes more and more coarse, until it terminates in the tracheal rattle. Abscesses, as I have said, are of very rare occurrence, but these are less unfavourable; for where an abscess is actually formed, there is a chance of the patient escaping the mischief of the active or diffuse suppuration; but remember, if there is a state of suppuration attended with abscesses, arising from poisonous matter in the system, the pus is already diffused through the system, and there is but little probability of recovery. In this state, when the abscess communicates with the bronchi, there may be a considerable discharge of pus, and it is extremely fœtid, shewing that the disease has gone on to that state in which there is partial decomposition of the suppurative matter. Hence, the abscesses found, under these circumstances, generally leave the pulmonary texture in a gangrenous condition in some parts of the organ. I have met with this in the upper and anterior part of the chest. Supposing this to take place, it becomes a very serious matter, and the patient could hardly recover from it. I have known but two cases of recovery; though I have heard from Dr. Chambers, that he has seen several such cases in persons afflicted with pneumonia, followed by a considerable extent of purulent expectoration of a very fœtid character, and evidently arising from a cavity in some part of the chest. Recovery, in these cases,

must depend on the remaining strength of the patient. When a cavity is formed, there will be cavernous respiration. Dr. Stokes and Dr. Graves have given some cases of this kind. In reference to this subject, you will find a short abstract, which contains the most important matter that is known on this head, in the *British and Foreign Medical Review*, for April, 1842. Now, the situation and extent of the physical signs will guide us as to the amount of the inflammation, and as to the prognosis. The inflammation is most common at the base of the lung; but where it occurs at the root, it is generally more serious in aspect. Then, judging not only by the situation —whether at the root or the base—but likewise in reference to the extent the disease occupies, its stage, the dullness on percussion, the bronchophony, &c.;—the extent of these signs will indicate the progress and the serious character of the malady. When the disease affects a large portion or almost the whole of one lung, whatever the stage of disease, it is one of great danger: if it affect both lungs, the danger is increased. If the case has gone on to signs of hepatization, without material improvement, the prognosis will be almost hopeless. On the other hand, the favourable indications are, besides the local symptoms of improvement,—the pulse becoming less frequent and less thready,—a return of strength, and an absence of delirium, &c. The local signs of improvement will consist, in the gradual return of crepitation and, consequently, of the respiratory murmur: the sounds, on percussion, will become improved; but if hepatisation has already existed, it will be a long time before the bronchial respiration and dullness will cease. A patient may carry about him some consolidation of the lung, and some amount of its signs for many months; and so long as he carries it about with him, he is greatly liable to a recurrence of the disease. If, on the other hand, the disease has only advanced to a state of congestion, this may disperse, and in the course of a few days, the signs of crepitation will cease altogether. The causes of pneumonia are those which act much on the vascular system; as cold, for instance, which is a very common and prevalent cause of pneumonia. This has been pointed out by Cruveilhier, as certainly inducing a great number of cases. I have seen, as the winter returned, and the cold weather came round again, that there has been an increase in the cases of pneumonia. There is another form in which it is produced, and that is by transitions of temperature, of an extreme kind. Persons going into a cold atmosphere after working in heated apartments, or becoming exposed to the night air, by lying in a drunken state in ditches and fields in the country, are peculiarly liable to pneumonia. But there are other causes that produce pneumonia, —they are, certain circumstances that tend to the production of asphyxia. Intoxicating poisons have a similar effect. Patients, recovering from the effects of opium, are, not unfrequently, attacked with pneumonia; all this arising from congestion of the lung. The same thing ensues from disease of the heart, causing congestion of the pulmonary organ.

There are some varieties of pneumonia which it is important that you should bear in your recollection, and these I shall notice in the next lecture.

PROFESSOR OWEN'S LECTURES.

(Continued from p. 391.)

The Acalephæ or Medusæ.—Their organization, &c.

The *Acalephæ* are represented on the British coasts by numerous discoid and spheroid gelatinous animals, varying in size from an almost invisible speck to a yard in diameter, known by the name of "Sea blubber," "Jelly fish," or by the Linnæan generic term "*Medusa.*"

The most characteristic features in the organisation of the Acalephæ, may be exemplified by the anatomy of the larger *Medusæ* of our own seas.

The first thing which astonishes us in commencing the dissection of these creatures,is the apparent homogeneity of their frail gelatinous tissue; secondly, the very large proportion of the body, which seems to consist of sea water, or a fluid very analogous to it: for let this fluid part of a large Medusa, which may weigh two pounds when recently removed from the sea, drain from the solid parts of the body, and these, when dried, will be represented by a thin film of membrane, not exceeding thirty grains in weight. The art of the anatomist would seem to be baffled by the very simplicity of his subject, instead of, as in other cases, by the inability to pursue and unravel all the intricate combinations of the created mechanism. Peron and Lesueur, two experienced French naturalists, who, during the circumnavigatory voyage to which they were attached, paid great attention to the floating *Acalephæ*, have thus summed up the results of their experience in regard to their organisation. "The substance of a Medusa is wholly resolved, by a kind of instantaneous fusion, into a fluid analogous to sea water; and yet the most important functions of life are effected in bodies that seem to be nothing more than, as it were, coagulated water. The multiplication of these animals is prodigious; and we know nothing certain respecting their mode of generation. They may acquire dimensions of many feet diameter, and weigh occasionally from fifty to sixty pounds; and their system of nutrition escapes us. They execute the most rapid and continued motions; and the details of their muscular system are unknown. Their secretions seem to be extremely abundant; but we preceive nothing satisfactory as to their origin. They have a kind of very active respiration; its real seat is a mystery. They seem extremely feeble, but fishes of large size are daily their prey. One would imagine their stomachs incapable of any kind of action on these latter animals: in a few moments they are digested. Many of them contain internally considerable quantities of air; but whether they imbibe it from the atmosphere, extract it from the ocean, or secrete it from within their bodies, we are equally ignorant. A great number of these Medusæ are phosphorescent, and glare amidst the gloom of night like globes of fire; yet the nature, the principle, and the agents of this wonderful property remain to be discovered. Some sting and inflame the hand that touches them; but the cause of this power is equally unknown."

The Ophiura; its discovery in fossil remains.

There are certain species of star-fish called *Ophiuræ*, in which the rays are extremely attenuated and elongated, and have neither ambulacral grooves nor tentacula. Nor is this complicated mechanism here needed, for the flexile and spinous rays can twine around and seize other objects so as to perform directly the offices of prehension and locomotion. The facility with which the Ophiura casts off a ray which may be touched and even all the rays, leaving only its central disc, when it is seized, is very surprising; it is consequently very difficult to preserve specimens of this genus entire. To do this it is recommended to plunge them suddenly into fresh water when they instantly die in a state of the most rigid extension. I may state that the Ophiura is one of the most ancient forms of animal life that has yet been met with in the fossiliferous strata of our climate. Professor Sedgwick, has lately discovered it in one of the oldest members of the Silurian system of rocks.

The Anellides—their power of reproducing lost parts. Spontaneous fission.

The power of repairing injuries and reproducing mutilated parts is considerable in the Anellides, and especially in the species of *Lumbricus* and *Nais*, in which it has been variously and extensively tested by the experiments of Bonnet and Spalanzani. A worm cut in two, was found to reproduce the tail at the cut end of the cephalic half, and form a new head upon the caudal moiety. Bonnet progressively increased the number of sections in healthy individuals of a small worm (*Lumbricus variegatus*): and when one of these had been divided into twenty-six parts, almost all of them reproduced the head and tail, and became so many new and perfect individuals. It sometimes happened that both ends of a segment reproduced a tail. Wishing to ascertain if the vegetative power was inexhaustible, Bonnet cut off the head of one of these worms, and as soon as the new head was completed, he repeated the act; after the eighth decapitatation the unhappy subject was released by death,—the execution took effect,—the reproductive virtue had been worn out: this series of experiments occupied two summer months. Since many of the smaller kinds of worms and Naids frequently or habitually expose a part of their body, the rest being buried in the earth, both they and their enemies profit by the power of restoration of the parts which may be bitten off.

With this power of reproduction of lost extremities is associated that of spontaneous fission in the genus *Nais*. In these little red-blooded worms, the last joint of the body gradually extends and increases to the size of the rest of the animal: its anterior part begins to thicken and to be marked off by a deeper constriction from the penultimate joint. In the *Nais proboscidea* a proboscis shoots out from it, like that on the head, and it is then detached from the old Nais. It often shoots out, previously to its separation, another young one from its own last joint in a similar way, and three generations of Naids may thus be seen organically connected, and forming one compound individual. Distinct sexual organs are developed in the Nais for both the formation and fertilisation of ova: but the illustrations of the generative system in the prepartions before you are derived from the leech, the earth-worm and a few of the dorsibranchiate Anellides.

The Hirudo Vulgaris, or Medicinal Leech.—Its mode of discharging its ova.

The fertile ova of the medicinal leech are discharged in groups of from six to fourteen, enveloped in a nidus or cocoon of mucus. The cocoon is ovate, two thirds of an inch in length and half an inch in diameter. It has a rough outer surface, but is smooth and slightly tuberculate within. In the month of August conical excavations may be observed in the slime at the sides of the reservoir, in each of which there is a cocoon. In a few days after the ova have been thus expelled and protected, the young leeches are extruded. The formation of the cocoon has been observed by Dr. Johnson in the rivulet leech (*Hirudo vulgaris*). In this species, when a cocoon is about to be formed, the body is observed to be greatly contracted both above and below the uterus: the included part swells, then becomes milky white, from the formation of a film into which the animal, having attached itself by its anal sucker, forces, with some effort, the whole contents of the uterus. This being done, the leech elongates the anterior part of the body, and thus loosening the enveloping membrane, withdraws its head as from a collar. It sometimes bends back its head, and, drawing the collar forwards, gently aids in its removal. The process generally occupies about twenty minutes. The cocoon is at first very elastic, and has no determinate figure. After the leech has attached it to some adjoining substance, it fashions it with its mouth into an oval form. The points of the cocoon from which the leech withdrew its head are weaker than the rest, and from these the young escape.

The Epizoon, originally a locomotive animal.

The first remarkable circumstance in the natural history of the aquatic Epizoa is the constancy with which particular species infest particular fishes or crustacea. And how, it may be asked, can creatures so devoid of means of transport, nay, in most instances, of the power of detaching themselves from the animals whence, like fœtuses, they derive their means of growth, originally reach the precise species of animal and organ to which they are habitually attached?

Are certain of the ova accidently retained near the parent after the rupture of the ovisac, and there grow, like seeds of plants fallen in a favorable soil? Or, do some of the liberated ova, by a happy fortuity, arrive at the appropriate organ of the appropriate species, and are they there accidentally retained until the prehensile instruments are developed? Such hypotheses may be permitted in reference to the ova of an Entozoon which are developed by millions, and need only to be swallowed by the animal in whose intestine

they are adapted to exist, but the ova are too few in the Epizoa, and the parts to which they are attached are too exposed, to allow of the supposition that their parasitic growth is dependent on such accidental circumstances. M. M. Audouin and Edwards appear to have been the first to suggest that the sedentary Lernæan Epizoa might enjoy at a previous state of existence locomotive powers, and the hypothesis was supported by the discovery, made by Dr. Surriray, of the embryo of a *Lernæocera*, still in the ovum, which, instead of resembling the parent, presented the characters of a locomotive Entomostraceous monoculous Crustacean.

The Mandibulate Insects—their organs of smell, of hearing, and of sight.

All Mandibulate insects have a process from the labium, within the mouth, so analogous to a tongue as to have received that name. It is particularly well developed in the dragon-fly and grasshopper, in which its soft, finely ridged, upper surface receives a rich supply of nerves. It is not present in the suctorial insects, which, as Burmeister well observes, always subsist upon one and the same food, generally inhabit what they feed on, and consequently less require the sense of taste.

Although a few physiologists have suspected that some part or appendage of the head, and others that the membranous lining of the spiracles were the organs of smell, the precise seat of that sense, which unquestionably exists in insects, has not yet been experimentally determined. The application by the common house-fly of the sheath of its proboscis to particles of solid or liquid food before it imbibes them, is an action closely analogous to the scenting of food by the nose in higher animals: and as it is by the odorous qualities much more than by the form of the surface, that we judge of the fitness of substance for food, it is more reasonable to conclude that in this well-known action of our commonest insect, it is scenting, not feeling, the drop of milk or grain of sugar. But no one ever saw an insect present its spiracles to a nutritive substance before feeding.

The signs of attention and hearing are plainer in insects than those of smelling; yet the precise organ has not yet been more definitely recognised, unless the structure, peculiar, however, to moths, described by Treviranus, be the true seat of the auditory sense; it consists of a simple drum situated in front of the base of each antenna. It is strange, however, that the organ under so well marked a form should not exist in crickets, tree-hoppers (*Cicadæ*), and other insects which attract their females by peculiar notes. Only the soft capsular membrane of the joint of the antenna, which in some movements may be rendered tense, has been alluded to by Burmeister as a structural indication of the organ of hearing in the peculiar appendages in which he supposes, with most other entomologists, that the sense resides. The acoustic nerve quits the antennal nerve, in the Crustacea, as if it were a branch of that nerve. Two, at least, and often more numerous nervous filaments from a slight ganglionic enlargement, penetrate the antennæ in insects; and these may subserve the distinct offices of the appreciation of the vibrations of sound, of the characters of surface, and of the regulation of the movements of the antennæ.

Of all the organs of the special senses not only is that of sight manifest without ambiguity, but it is more complicated and relatively larger in insects than in any other class of animals.

What would be thought of a quadruped whose head, with the exception of the mouth and the place of juncture with the neck, was covered by two enormous convex masses of eyes, numbering upwards of 12,000 in each mass? Yet such is the condition of the organs of vision in the dragon-fly, which, besides the two great compound eyes, supports, in the narrow interspace on the vertex of the head, three simple eyes, called ocelli and stemmata.

Insects; their powers of locomotion; their circulatory System.

The extraordinary powers of locomotion possessed by insects the variety of elements which they can traverse, their aptitude to gain access to every situation where organised matter may be obtained, prepare us to expect that they should manifest all the modifications of the digestive system which may be required for the assimilation of the different kinds and conditions of the solids and fluids of plants and animals.

One insect preys upon another; pursues and attacks, like the falcon, on the wing; but, with better mastery over the air-element, it can tear to pieces and devour its prey without alighting. Another insect, sedentary and inactive, imbibes the juices of a plant; a third eats its way into the hard wood; a fourth burrows in the earth for roots or worms.

Some traverse the surface of the earth with a succession of steps too swift for definition; some by leaps so extraordinary, as to have excited the powers of the dynamical calculator from the earliest periods. The waters, also, have their insect population; some swiftly cleaving the clear element, some gyrating on the surface, whilst others creep along the bottom. Nor are the activities of the aquatic insect confined to that lower sphere. The Nepa, or the Dytiscus, at the same time, may possess its organs of reptation, of burrowing, and of flight; thus, like Milton's fiend, it is qualified to different elements, and

> "Through strait, rough, dense, or rare,
> With head, hands, wings, or feet, pursues its way,
> And swims, or sinks, or wades, or creeps, or flies."

With such diversified powers of attaining food, there are, in fact, associated, in Insects, equally, if not more varied, structures for imbibing, seizing, masticating, and digesting nutritious substances. The patience of the anatomist is taxed to the utmost to unfold these delicate structures; but his admiration is chiefly excited by the discovery that they are so clearly referable to a common type.

In the perfect hexapod insect, the heart has the appearance of a series of slightly conical segments, partially sheathed one upon the other: lateral apertures exist at the sides of the intus-susceptions where, in fact, valvular folds of the inner tunic do project into the interior of the heart, and partially divide its cavity into so many separate chambers. The whole of this part of the heart is included in a saccular venous sinus, from which the blood passes into the interior of the heart, and, by the disposition of the valves, it is at once prevented from returning into the sinus, or passing in any other direction in the heart than towards the head, or into the next chamber in advance of that by which the fluid was admitted. The number of venous orifices varies in different insects:—in most species there are eight pairs of apertures; in the stag-beetle there are six pairs; in the humble-bee five pairs; in the phasma there is, according to Müller, only a single pair at the posterior chamber of the heart, by which, in fact, in all Insects, the chief currents of the blood appear to enter the organ. As far as the head the blood is propelled from the heart along a tubular aorta of the usual form; but the branches from this would appear soon to lose themselves in the generally diffused sinuses. In the Myriapoda, however, the blood is continued in a vessel along the dorsal aspect of the ventral nervous chord; but the traces of the true tubular vascular system are scanty and obscure.

Cuvier, misled by the anomalous diffused condition of the venous system, supposed that there was no circulation of the blood in Insects; yet the dorsal vessel was too conspicuous a structure to be overlooked. Such, however, was the authority of the great anatomist, that the nature of the heart began to be doubted, and the strangest functions to be attributed to it. Hunter, however, who was prepared to appreciate the true state of the circulating system in insects, by his discovery of the approximatively diffused and irregular structure of the veins in the Crustacea, has described in his Work on the Blood all the leading characters of the circulation in Insects as it is recognised by Comparative Physiologists of the present day. He says, that, "As the lungs of the flying Insect are placed through the whole body, the heart is more diffused, extending through the whole length of the animal;" that "where the veins near the heart are large, there is no auricle, as in the lobster and generally in insects;" that "in the winged Insects, which have but one heart, as, also, but one circulation, there is this heart answering both purposes" (viz. the corporeal and pulmonary circulations); and again, "with respect to its use, it is, in the most simple kind of heart, to propel the blood through the body, immediately from the veins, which blood is to receive its purification in this passage, when the lungs are disposed throughout the body, as in the flying Insect." In the note at p. 221, he alludes to the animals in which the veins are entirely cellular; and expresses his idea more definitely in the following passage from his manuscript Observations on Insects:—"*Of the veins.* The veins of the Insect would appear to be simply the cellular membrane; but they are regularly formed canals, although not so distinctly cylindrical canals as in the quadruped, &c., nor branching with that regularity. They would appear to be, or to fill up, the interstices of the flakes of fat, air-cells, muscles, &c., and therefore might be called in some measure the cellular membrane of the parts."

The chief merit of the re-discovery of the circulation of the blood in Insects is due to Carus; its phenomena have been witnessed in the appendages of insects by other observers, as Ehrenberg, Wagner, Burmeister, Bowerbank, and Tyrrell. Hunter counted thirty-four pulsations in a minute in the heart of a silkworm. Herholt counted from thirty to forty pulsations of the heart in a minute in a full grown caterpillar: Suckow observed thirty per minute in a full grown caterpillar of the pine moth, and only eighteen in its pupa state.

The action of the heart is accelerated in insects, as in other animals, by muscular exertion and excitement; and Mr. Newport has counted as many as 142 pulsations in a minute, in a species of wild bee so excited.

Although the anatomist searches in vain for that profusion of arterial and venous vessels which pervade the body of most animals, the insects are not without their systems of capillary tubes, which ramify as richly over all the organs and through every tissue, and which connect together the different parts of the body. These vessels, however, carry air instead of blood; the relations between the sanguiferous and respiratory systems are reversed, and the air is distributed by a vascular system over the reservoirs of blood, instead of the blood being distributed by a capillary net-work over a reservoir of air. The aëriferous tubes in insects are called "tracheæ," having their parietes strengthened by an elastic cartilaginous filament, not indeed disposed in a series of distinct rings, but in a continuous close spiral coil. By this structure the most delicate and invisible ramifications of the air-tubes may be easily recognised under the microscope. The spiral filament is situated between the external cellular, and an internal delicate epithelial lining.

PERISCOPE OF THE WEEK.

(British and Foreign Medical Review; Medicinisches Correspondenz-blatt; Bayer, Aerzte; Nederlandsch; Lancet; Gazette Medicale de Strasbourg; Journal des Connaissance Medico-chirurgicales; London and Edinburgh Medical Journal; Medical Gazette; Gazette Medicale; Pharmaceutical Journal; Guy's Hospital Reports; American Journal of Medical Sciences.

GONORRHŒA IN THE FEMALE.—Ricord says that gonorrhœa from infection is far more frequent in the male than in the female, in the proportion perhaps of four to one. Young persons are more easily infected than full grown women, and that, during the performance of the catamenial function, females are, in a great measure, protected against contagion. The parts affected in gonorrhœa occurring in the female, are the vulva, urethra, vagina, and uterus, which may be diseased simultaneously or separately. In inflammation of the vulva the follicles are the parts chiefly affected. Haller long since describes these follicles, and two in particular, situated between the labia interna and the carunculæ, which have long sinuses, and may be the exclusive seat of the disease. M. Moulinie, of Bourdeaux regards these two follicles as the specific organs of virulent infection. Inflammation of

the urethra is as frequent as it is said to have been rare, and it may be further asserted that if the term "gonorrhæa" be destined to convey the notion of a discharge arising from coitus alone, urethritis will be found in three-fourths of the patients examined. Vaginitis is, however, by far the most frequent form of gonorrhæa in the female; nothing can be more uncommon than to find urethritis existing without a concomitant inflammation of the vagina. Vaginitis may occupy nearly the entire surface of the vaginal mucous membrane, or it may be confined to its follicles, or, again, it may invade the submucous cellular tissue in the shape of phlegmonous inflammation. The disease may also extend to the lining membrane of the womb. Daran, indeed, is of opinion that uterine catarrh cannot exist without gonorrhæa, but this is an error. Ricord states, however, that uterine catarrh is by far the most frequent cause of gonorrhæa in the male. The secretion is viscid, opaline, and albuminous, in vaginitis yellow and purulent.

Closure of the Aorta.—Dr. Wise mentions the case of a strong middle-aged Bengalee, who died suddenly. On examining the body, a large quantity of blood was found in the cavity of the chest. The aorta was enlarged, until after the giving off the innominata and the left carotid and subclavian arteries, when it became suddenly contracted for a line in breadth, as if a ligature had been passed tightly round it; and, on examination, it was found there to be completely impervious under the ductus arteriosus, which was also closed. Immediately beneath this the aorta was of the natural size, and was supplied with blood by several enlarged arteries. The left ventricle was thicker than usual, and the internal coat of the aorta near the heart was torn for an inch and a half, commencing a short distance above the semilunar valves, and extending obliquely upwards. Through this slit, and through the cellular and muscular coats, blood had been forced into the cavity of the chest, causing the sudden death. There was also an incipient aneurism at the bifurcation of the left carotid.

Button in the Trachea.—A boy, eight and a half years old, was operated on by Mr. Dicken, of Middleton, who opened the trachea, and introduced a pair of forceps, with which he was enabled successfully to extract a button, which had been in the right bronchus thirteen days. The first few times the forceps were introduced through the wound into the trachea, convulsive cough was induced, but after a while it entirely subsided.

Modification of the Hydrostatic Bed.—Dr. Ogden, of Sunderland, has used a kind of hydrostatic bed, which he thus describes:—a bed-frame is prepared with feet, sides, and ends, similar to those of ordinary beds. At three or four inches within the side-bars two others are placed parallel to them, leaving in the centre an open space, at least, of two feet broad. A sheet of strong canvas is stretched over the whole, and laced with a cord to the ends and external lateral bars, sufficiently slack to allow the part between the two internal bars to be depressed nine inches in the centre, and only two or three inches at each end. In the cavity of this depression is placed a sack of water-tight Macintosh cloth, large enough to allow the introduction of twenty or thirty gallons of water, without producing any tension; it must remain perfectly flaccid. The neck is brought through the foot-board of the bed to the outside, where water is introduced, sufficient being employed to fill the sack to within half or three-fourths of an inch of the level of the bed-frame. The apparatus then presents the appearance of a nearly level surface, consisting of two lateral planes, rigid and tense, and one central plane of the greatest possible softness. A thin mattress from 1 to 2 inches thick is laid upon this, and then the bed clothes are put on, when the bed is ready for use. The advantages of this apparatus Dr. Ogden considers to be, greater facility of ventilation, superior portability, a smaller quantity of water being required, and less expense. There is not any necessity to close the orifice by which water is admitted; it requires simply to be turned upwards and supported with a loose string, to prevent the water from flowing out by the movements of the patient. The water can be discharged from the sack, when requisite, by means of a syphon.

Pilula Ferri Composita.—The mass for this pill can be made according to the directions of the Pharmacopœia, free from any of the objections which have been pointed out, by attention to the following particulars:—dissolve the sulphate of iron, finely powdered, in the treacle, with a moderate heat, and add the carbonate of soda, stirring constantly until the effervescence has entirely ceased, and the mixture has become cool; then add the myrrh gradually, and incorporate the mass. As a little evaporation takes place at the commencement of the process, a small excess of treacle is requisite to supply the deficiency. This mass retains its color and consistence remarkably well.

Iodide of Potassium, with Sarsaparilla.—M. Ricord recommends a preparation containing a drachm of iodide of potassium to twelve ounces of syrup of sarsaparilla, in the treatment of tertiary syphilis, or where the patient has been the subject of a protracted mercurial course. The dose is a tablespoonful three times a day.

Action of Belladonna and Hyoscyamus on the Eyes.—A grain of the extracts of either of these plants is sufficient to obtain a well-marked dilatation of the pupil, but a fifth or a tenth of a grain of atropine will produce the same effects. A very prompt and durable dilatation may be obtained by the endermic method, by applying these narcotics to the most vascular parts near the eyes.

Singular Case of Pus-Concretions.—Mr. Daws, a veterinary surgeon, had a large abscess opened in a horse, which discharged about three pints of pus, and with it between three and four hundred irregularly-shaped, flattened bodies, of a yellowish colour and various size. The borders and angles were rounded and polished, as were any prominences on their surface, whilst their flat sides presented a very slight concavity, which was roughened by a whitish deposit of granular albumen. Their weight was twenty ounces. When divided with a knife, the centre of the section was cream-coloured, homogeneous, tough, and somewhat loose in texture; but the exterior was yellow, dense, firm, semi-transparent, and even horny: there was a distinct, semi-transparent, horny pellicle surrounding each concretion. On examination with the microscope, the central part was found to be composed of pus-corpuscles, very closely aggregated.

Lithectasy.—The operation performed by Mr. Fergusson, of King's College, and the clinical remarks made by him, which were published in a recent number of the Medical Times, have drawn from Dr. Arnott, of Brighton, some observations on the subject, which we propose to condense. The mortality consequent on lithotomy and lithotrity, he refers to inflammation, caused either by violence in opening a passage for the stone, or by the infiltration of urine, or by rudely acting with instruments on the sensitive and irritable coats of the bladder. The sudden stretching and laceration produced by the apparatus major, when it was the ambition of the surgeon thus to remove the stone within the minute, and that produced in the present day by operators, who only slightly cut the prostate, and are yet anxious to put an end to the patient's torture, by finishing the operation in the shortest possible time, are instances of violence. Large incision, and the repeated operations of the lithotritist, are not less calculated to excite inflammation in the other ways mentioned. A calculus may, however, be removed from the bladder, without giving rise to any of the causes just enumerated, by really doing that which the operators by the apparatus major only professed to accomplish, namely, by dilating the neck of the bladder and contiguous part of the urethra, the dilatation being effected very slowly, and unattended with pain. Such dilatation cannot be made unless the pressure by which it is effected be perfectly equal, or applied to every part of the surface; unless it be of a continued nature, as from elasticity, and unless it be in the power of the surgeon or the patient himself to increase or diminish it immediately, and without irritation, according as the feelings of the patient, or other circumstances, may require. This combination of desirable ends cannot be attained otherwise than by a dilator, constructed on the principle of fluid pressure. Fluid distension, as used by the Arabians, was in its first and rudest condition: they employed a cartilaginous tube, which was passed along the urethra into the bladder, and inflated by the surgeon's breath. An apparatus of this kind would yield where there was the least resistance, and could not afford sufficient power. A necessary improvement on this consisted in giving it an outer coating of a firm and unyielding texture, which was done by encasing the piece of gut, prepared by stripping off its mucous and muscular coats, in a silk tube, rendered sufficiently impervious and smooth by varnish. Both ends of the distensible tube must, when used for dilating the urethra, be tied upon a narrow silver tube or catheter, in order that there may be no impediments to the evacuation of the urine, the distending liquid being injected by a syringe through a separate tube soldered to the catheter. After many trials, thick mucilage was found to be the best fluid that could be used for the purposes of distension; thinner fluids, when much pressure was employed, escaping through the tube, or at the different joinings. The last improvement was a means of easily regulating the pressure. Injecting more fluid at intervals, and retaining it or allowing it to escape by closing or opening a stop-cock, is an imperfect mode of accomplishing this. By using a syringe, which has a piston-rod made in the form of a screw, the pressure can be regulated with the greatest ease by the surgeon, or, in some cases by the patient himself. The syringe should be of large size, or a vessel, serving as a reservoir of air and mucilage, may be attached, by the medium of a flexible tube, to the dilator.

In the performance of the operation of lithectasy, Dr. Arnott differs in opinion with Mr. Fergusson respecting the necessity of a large incision in the perineum, which he conceives need not be larger than is necessary for passing the empty and condensed dilator into the membranous part of the urethra, as the outer parts will yield to the fluid pressure as readily as the neck of the bladder, and any advantage that might be gained in removing the

depth of the perineum by a large incision, is more than counterbalanced by the suffering it would occasion, the risk of hæmorrhage, and the period that would elapse before recovery is complete. The introduction of the dilator might be facilitated by passing the canula forming its axis over a long ball-pointed wire previously introduced along the groove of the staff into the bladder. If the ball at the extremity of the wire were made of sealing-wax, it could then be broken, and the wire extracted. The time occupied in effecting dilatation must depend, in a great measure, upon the age of the patient, the hardness of the parts to be dilated, their irritability, &c. It must not, however, be so rapid as to produce pain or severe irritation: there is less risk from prolonging it too much, than from the contrary extreme. When dilatation has been effected, should the stone prove too large to pass readily, it should be broken by lithotrity instruments introduced through the perineum, or it would be much safer to cut the distended prostate, on the finger introduced as a director, and so to enlarge the opening, than to use force. If a mere notch be thus made, the opposing substance will give way by tearing, from which there will be less danger than by bruising. On practising the dilatation, instead of two or three distensible membranous tubes of different sizes, tied upon different catheters, or upon the same in succession as they are wanted; they may be all tied at first upon the same, each having its own injection tube, as it is highly important to avoid unnecessary irritation from the passing and repassing of instruments.

Application of Blisters to Children.—The columns of one of our contemporaries have recently contained several letters on this subject, the gist of which is that as the skin of young children will not bear the same amount of irritation produced on it as that of the adult, blisters should not be used when they can be avoided, nor applied for more than three hours. All this was known before, and the effects of blisters in causing sphacelus (not mortification) had been pointed out years ago, consequently the pages of our contemporary have been so far uselessly occupied. One of the most important of these communications, however, that of Dr. Houlton, mentions a fact worthy of commemoration, and, therefore, we give it publication in our journal. He observes, that although a blister does not produce any visible effect upon the skin of a young child in an hour, nevertheless sufficient irritation will follow, if it be then removed, and the part covered with any mild dressing or poultice. The blister should be spread very thin.

Leprosy in China.—The first appearance of the disease is a red spot either on the face, body, or legs—most frequently on the face. This gradually spreads to a patch, which is usually round, or in streaks. Sometimes these patches unite, and in other cases they are distinct and numerous. On examining this patch, the integument seems thickened, is elevated, and of a dull reddish hue; the skin looks tense, and is very similar in many cases to the inflamed skin from a blister before the cuticle is raised by the effusion of serum; in others it is smooth and shining. On pricking it, instead of a very limpid fluid issuing, as might be expected from its appearance, blood flows. The ears soon become swollen, thick, and permanently red; usually the affected part loses its sensibility, and, if the disease advances, the hair falls off from the eye-brows and head, the tendons of the hands and feet contract, and the skin ulcerates and discharges a thin purulent secretion. In the worst cases there is sometimes much swelling of the extremities, with the toes or fingers ulcerated off. The distinguishing characters of the leprosy are, the thickened integuments, the reddish hue, elevation of the patches, and its invariable tendency to spread. The children of leprous parents are at once recognised by the coarse thickened expansion of the features, a broad nose, large ears, and a dry shrivelled skin on the arms and legs. It is undoubtedly an hereditary disease, but is said to become mild in the third generation, and to wear itself out in the fourth. The Chinese believe it to be eminently contagious, and take many precautions to avoid exposure to danger. To prevent any children being inoculated with this dreadful malady, the government orders two policemen from the lazar house to examine all the children brought for vaccination, and if there be any suspicion of leprosy, the child cannot be vaccinated. One mode used by the Chinese, of testing the existence of leprosy is to place the suspected person in a dark room where some nitre is burning; if the complexion changes to light blue, it is not leprous—if it remain unchanged, of a reddish hue, it is. Another mode is, to take the person to a shop, and expose the diseased part to the blaze of a refining furnace, when, if it remain of a dullish red, it is the leprosy. This disease is chiefly met with in Canton, and in the neighbouring provinces of Kwangsi and Fukien, and its prevalence in these is ascribed by the Chinese to their being lower and more damp than the other provinces. The fact appears to be established, that it is confined to the southward provinces. Not a single case was seen at Chusan, and it may reasonably be supposed, from the fact that the disease is unknown in Europe, and in temperate or frigid zones, that its not making progress further towards the north in China is owing to the intense cold of the other provinces in winter. It has hitherto proved to be incurable.

New Combinations of Cyanogen.—M. Meillet prepares several combinations of cyanogen with the metals by a process of a less complicated character than that adopted by the German chemists. The *auro-cyanogen*, or *auro-cyanuret of potassium*, is obtained by adding a saturated solution of neutral chloruret of gold to a perfectly pure cyanuret of potassium, prepared after Leibig's directions. The solution is evaporated, and on cooling, the salt crystalizes in very white scales of a pearly lustre; the chloruret of potassium and the excess of cyanuret remain in the mother-waters. This crystalized salt gilds much better with the pile than the solutions generally used. The *platino-cyanogen*, or *platino-cyanuret of potassium*, is prepared by adding the concentrated chloruret of platina to a saturated solution of cyanuret of potassium, when there will result a precipitate of the chloruret of platina and potassium mixed with cyanuret; the liquid is raised to the boiling point, and the precipitate is re-dissolved with considerable effervescence, and a free disengaging of carbonate of ammonia. This latter phenomenon may be explained by supposing that the cyanuret of platina which is formed, re-acts as an acid on the atom of cyanate of potass which is always contained in the cyanuret of potassium, and sets at liberty the cyanic acid, which absorbs three atoms of water, and is changed into bicarbonate of ammonia. In fact, cyanic acid being C^2, N^2, O, with three atoms of water H^6, O^3, will give an atom of bicarbonate of ammonia C^2, O^4, N^2, H^6. After the complete solution of the precipitate, the platino-cyanuret of potassium is set to cool and to crystalize; it forms needle-like crystals of a pigeon-neck blue colour by reflected, and yellow by transmitted, light. The *cupro-cyanogen*, or *cupro-cyanuret of potassium*, is prepared by dissolving the cyanuret, or carbonate of copper in the cyanuret of potassium, with the aid of heat and evaporating; on cooling, it crystalizes in beautiful white needles. The *argento-cyanogen*, or *argento-cyanuret of potassium*, is procured by dissolving the cyanuret of silver in the cyanuret of potassium until it is saturated; the liquid is filtered and evaporated, and the salt crystalized, which it does easily in rectangular square tables analogous to those of the chlorate of potass. The *argento-hydrocyanic acid* is prepared by dissolving the cyanuret of silver in the cyanuret of barium, and precipitating the barytes by sulphuric acid; it is a yellowish acid, rather stable, having an odour of prussic acid; it is very weak, but nevertheless combines readily with alcaline bases—with more difficulty with the carbonates. The *hydrargyro-cyanuret of potassium* is a salt analogous to the preceding, and prepared in the same way; it is white, very soluble, and is met with in the form of small granular crystals. Similar combinations may be effected with a great number of other salts, such as those of cobalt, nickel, and cadmium.

The White Proto-chloruret of Gold.—This salt is procured, according to M. Alphonse Meillet, by pouring the chloruret of gold, when dissolved, into a solution of the hypo-sulphite of soda, which is then filtered to free it from a little precipitated sulphur, and evaporated to the consistence of a clear syrup; the capsule is then placed under a vessel containing lime, and the evaporation completed. Several very different salts are crystalized; thus there is the chloruret of sodium in very distinct cubes, as well as the prisms of sulphate and hypo-sulphite of soda; the chloruret is crystalized in the intervals in fine small needles. The foreign crystals, especially the chloruret of sodium, are separated as much as possible, and the mass is treated with cold alcohol at 90 deg. The chloruret of gold is alone dissolved; the solution is filtered, and allowed to evaporate spontaneously; it is then very white, and crystalizes in small fine needles. It is not precipitated by the salts of iron, mercury, or tin at the minimum; the alcaline hydro-sulphates only precipitate it in the state of a clear yellow proto-sulphuret; it does not stain the skin, and has a very feeble savour, very different from the disagreeable taste of the chloruret of gold. It does not present any of the reactions of the other salts of gold. Supposing it to be formed by an atom of proto-chloruret of gold, and one of the chloruret of sodium, it would be represented by the formula $CH^4\ An^2 + CH^2\ SO$. It consists of gold 50,715, sodium 11,788, chlorine 37,497, or chloruret of gold 67,200, chloruret of sodium 32,800.

Colouring Properties of Aloetic Acid.—M. Barreswill has ascertained that aloetic acid melted with colophane, gives rise to a most intense blue colour. He has not yet been able to extract this colouring matter, but he has remarked that the resin thus rendered blue is readily dissolved in alcohol, in essential oils, and fatty bodies, so that it can be used to give them a blue colour, as also to injections. The power of aloes of imparting this blue tint is very considerable; some decigrammes of crude aloetic acid melted with twenty scruples of resin being sufficient to colour a pound of tallow.

New Method of Injecting Anatomical Preparations.—Dr. Lenoir and M. Barreswill have tried a new mode of injecting anatomical preparations, in which they have

availed themselves of the remarkable property pointed out by M. F. Boudet, of the induration of oleic acid caused by the hyponitric acid. As the solidification does not take place immediately, the ordinary apparatus may be used, nor is heat required. One hundredth part of hyponitric acid is added to the oleic acid, and the mixture well shaken for ten minutes, after which it is fit for use. The only objection that has been discovered hitherto to this process, is the impossibility of colouring the injection red; the vegetable and mineral substances that have been used for that purpose are decomposed and blackened. The only colours that have as yet been obtained are the yellow, which is proper to the oleic acid, and the black, produced by animal charcoal.

Analysis of a Gouty Concretion.—M. Larocque has analysed a gouty concretion obtained from the first joint of the great toe, and found it to consist of oleic and margaric acids, urate of soda, and the chloruret of sodium. The fatty acids were united with glycerine.

Vermifuge Liniment.—M. Pétrequin recommends a liniment composed of 32 scruples of castor oil, 15 of oil of absinthium, 15 of oil of tansy, and 20 drops of an ethereal tincture made of the buds of the aspidium felix mas, as a vermifuge. It is to be rubbed in over the abdomen. It may be rendered more active by digesting a clove of garlic in the oil of tansy.

Anti-Rheumatismal Derivative.—Digest 30 scruples of euphorbium, and 15 of cantharides, in 150 of alcohol, for eight days; then filter, and add 60 of colophane, and 50 of turpentine. Three layers of this preparation are to be laid on fine paper, which is to be used as a derivative plaster.

Rubefacient Ointment.—M. Caventou advises an ointment made with two parts and a half of lard, half a part of wax, and one of croton oil, as a rubefacient. The wax and lard are melted together at a gentle heat, and the croton oil incorporated when cold. It may be used for keeping blisters open, when diluted.

The Chloro-ioduret of Mercury.—M. Recamier has derived great benefit from the use of an ointment made with four grains of the chloro-ioduret of mercury and 20 scruples of lard, in the dispersion of tumours of the breast. The chloro-ioduret is prepared in the following manner:—Equal parts of the biniodurct and bichloruret of mercury are used; the bichloruret is dissolved in a sufficient quantity of alcohol at 40 deg., the biniodurct is then added, and is partly dissolved in the alcohol by means of the bichloruret; the product is evaporated in a capsule, and a pulverulent residue of a red colour and complex nature is obtained. It is a mixture of the bi-chloro-ioduret of mercury with the biniodurct, and is one of the most energetic mercurial compounds; it is certainly more active than the two salts taken separately.

Chinovic Acid.—A new acid was discovered by Pelletier and Caventou in a species of false cinchona bark, called, *China nova S. Surinamensis.* This acid was named chinovic acid, and subsequently Winckler found in the same bark a bitter, which he called chinovic bitter, and which Buchner, the younger, believed to be identical with the smilacine of sarsaparilla. These substances have been recently examined by Schnedermann, who ascertained that it contained the elements of one atom of water less than the smilacine, and further that the bitter and acid were identical, the chemical properties also shewing its claim to be regarded as an acid. The acid used in his experiments was obtained by boiling the bark with milk of lime, and precipitating it from the filtered liquid with hydrochloric acid. It was purified by repeated solution in ammonia, treated with animal charcoal, and then precipitated by hydrochloric acid. It was afterwards redissolved several times in alcohol, to bleach it; and precipitated by adding the solution to boiling water, when it floated in light flakes on the surface, and was separated by the filter. If cold water had been used, it would have passed through the filter with the liquid. It is obtained in fragments like gum, and has a brilliant white colour. M. Schnedermann was unable to crystallize it. It is easily soluble in alcohol and ether, with the aid of a gentle heat. Its savour is bitter. One hundred parts contain, carbon 67.68, hydrogen, 8.98, oxygen, 23.34. It contains in its free state an atom of water, and consequently its formula is, H^2, $O + C^{38}$, H^{58}, O^9. The chinovate of potass, after evaporation, appears in the form of a yellowish amorphous mass; the ammoniacal salt is decomposed by the evaporation, and the chinovic acid is set free: the calcareous salt, when evaporated, is a flocculent residue, the concentrated aqueous solution of which thickens when heated, and becomes clear and fluid on cooling. The magnesian combination prepared by boiling with magnesia and water, separates by evaporation, and floats on the surface in the form of a colourless membranous mass, strongly resembling a fatty body, and remains after perfect dessication, in the state of light white scales. All these chinovates are very soluble in water and alcohol, and have a very bitter taste. They have a feeble alkaline re-action, and the chinovic acid is separated from them by all other acids, even by the carbonic.

The Galvanic Apparatus.—M. de la Rive, of Geneva, has instituted a series of experiments on the effects of a single pair of plates, from which he concludes, that their action is materially impeded by the collecting of the disengaged gases, hydrogen and oxygen, about the respective electrodes, that under a vacuum, where the adhesion of the gases to the surface of the electrode is diminished, the current is transmitted much more freely; that the current of a pair, rendered alternative by the use of a commutator, easily traverses a voltameter of platina blades charged with acidulated water, the same effect attending the direct current of a pair, transmitted through a voltameter, which is traversed at the same time by a current of induction directed in a contrary sense to that of the pair; that by constructing a pair in which the platina is replaced by a peroxide, and especially by the peroxide of lead, it is rendered, even when charged by only a single liquid, as acidulated or salt water, capable of decomposing water with great energy, the gases being obtained separate, and by employing the current of the pair itself to produce the current of induction traversing the pair in a proper direction, the electro-chemical power is so increased, that although at first almost null or very weak, it becomes equal to that of a pile of several pairs. The advantages M. de la Rive proposes to derive from his investigations, is the substitution of a single pair of plates in many instances for the galvanic pile, thus constituting a real advantage as regards economy and the facility of manipulation.

Preparations of Iron in Chlorosis.—M. Trousseau observes that chalybeates, although in general indicated in the treatment of chlorosis, and of service, are sometimes of disuse; and when the disease does not yield to a fair trial of the remedy, it should be discontinued, and the patient carefully examined for symptoms of a latent tubercular diathesis. If the use of ferruginous preparations be persisted in in a tubercular constitution, the latent disease will shew itself, and proceed with frightful rapidity to a fatal termination. When the chlorotic patient is a young girl at the age of puberty, the disease has not been long in existence, the patient has not had any scrofulous swellings in early childhood, nor ever been troubled with hœmoptysis, and her parents have not a tuberculous diathesis, steel medicines may be safely prescribed; when, however, there is reason to fear the tuberculous predisposition, residence in the country, and especially in a better climate, the analeptic regimen, horse exercise, sulphurous medicines, &c., are advised by M. Trousseau, who religiously abstains from chalybeates under such circumstances. The younger the patient, the better is the administration of steel supported; and if the chlorotic patient is an adult, from 25 to 35 years of age, M. Trousseau is very guarded in prescribing it. The occurrence of hæmoptysis distinctly counter-indicates its use: but when chlorosis is dependant on a great hæmorrhage, on metrorrhages, or painful lactation, he would use it, in case the tubercular predisposition did not exist.

Singular Change of Colour in a Medicine.—M. Blell, a pharmacien at Berlin, had a prescription sent to him to be made up, as follows:—A scruple of the arnica flowers were to be infused in 100 scruples of boiling water, the liquid filtered, and 12 scruples of powdered gum-arabic, 12 grains of carbonate of magnesia, and 24 scruples of syrup of marsh-mallow, added. After it had been made up, it remained in M. Blell's pharmacy before it was sent for, and during that time it underwent the following changes in colour. The liquid, at first of a yellowish colour, became gradually greenish, then clear, then of a deep colour, like a mixture of olive and grass-green colours. The causes of these changes did not exist in any impurity in the arnica, nor was the gum nor syrup of marsh-mallow in fault, as was shewn by experiment; it occurred only when the arnica infusion was treated with carbonate of magnesia. Calcined magnesia produced a similar effect after a longer time; the carbonate of potass merely darkened the yellow colour of the infusion, and liquid ammonia caused the same effect. Lime water rendered it turbid, and produced a yellow-white precipitate; the acetate of lead occasioned a yellow-white precipitate, and the sulphate of copper changed its colour to a yellow-green.

Spiders Discharged from the Eye.—Dr. Lopez, of Mobile, publishes in the *American Journal of the Medical Sciences*, a very interesting case of this kind. He says I was requested on the 5th of Feb. 1840, to visit a young lady, from whose mother I received the following statement. The patient had left the city of Charleston, S. C. (at which place I then was), to visit a friend who resided in the country. On the night of the 29th Jan., while conversing in bed, she was sensible that some object had fallen from the ceiling of the apartment, upon her cheek, just below the inferior lid. This caused her to apply the hand briskly and forcibly in order to brush off, what she supposed to be some one of the many insects so common in country houses, upon which, the friend with whom she slept observed, that as the room was much infested with spiders, it was probable that the object which had fallen was one of them. In the course of the night she was awakened by a feeling of intense pain *in her left eye*, which continued at intervals until morning, when, upon examination, the eye was discovered to be highly *inflamed* and *lachrymose.* Ordinary domestic

means were applied, and during the morning, feeling an intense degree of itching and irritation, she rubbed the lids together upon the ball and removed *two fragments* which were readily recognised as the *dismembered parts of a spider.* Her alarm in consequence became very great, and was much heightened when the same thing was repeated in the afternoon. She left for home and arrived in Charleston on the 2d Feb. During the voyage her mind was much perturbed and under considerable excitement from the event, and when I paid my first visit on the 5th, the date mentioned in the early part of my statement, the following was her condition: the right eye unaffected; the *left*, turgid, inflamed and weeping; and there *had been removed from it that morning a spider*, imbedded in mucous covering. It was entire with the exception of two legs. The two preceding days before I had seen her *three others* had been removed and were now exhibited to me. I immediately submitted the eye to as close an examination as the irritable condition of the parts permitted, *without being enabled to discover the minutest portion of any foreign substance.* In order, however, to combat the pain and inflammation I ordered leeches, saline-antimonial medicines, and evaporating lotions. I thenceforward visited her daily until the 19th, and at *every visit I removed either an entire or dismembered spider from the same eye.* Before proceeding, it will be well to mention that during the interval between the 5th and 19th, I invited to an examination of the case, Professors Geddings and Dickson, and Doctors Bellinger and Wurdeman. Dr. Dickson on one or two occasions also removed these objects from the patient's eye. I made, assisted by Prof. Geadings, the most minute scrutiny with a view of discovering, first, whether there could possibly exist a nidus within the orbit for these animals; secondly, whether a sac containing their ova was there concealed; and thirdly, if any communication between the eye and nose could account for their appearance. For these purposes, the superior and inferior palpebræ were everted with great care, traversed thoroughly with a blunt probe, and afterwards I threw injections around the internal lining, but all to no avail. The anterior and posterior nares were closely examined by strong light, both of the sun and candle, yet we could not perceive the slightest trace of any means by which either ova, insect or nidus could be retained. The sensations always precursory to their removal were, a sense of burning in the ball, a pricking of the superior lid, proceeding more or less severely around the orbit, until it assumed a fixed pain within the lower lid, upon the eversion of which by myself, if present, or by her mother, in my absence, the spider, always dead, would be discovered enshrouded in its mucous bed, and removed by the finger or probe. I now resume the order of their discharge. From the 19th they were removed *from both eyes*, and so continued until the 23d, when again they became confined to the left, and afterwards *from each eye alternately* until the 5th march, when a truce was had until the 10th. During this interval, the eyes resumed their normal condition, but again, on the 10th, the inflammation was renewed, and the discharge of spiders recommenced, the right eye being now chiefly the depository. Up to the date, during which time my visits were unremittingly made, none other than general observations were kept, but, the spider-making power appearing so inexhaustible, a more circumstantial diary was thought necessary.—March 10th. Two spiders.—11th. Two. Pain over right orbitar region passing gradually over the frontal sinus to the left. Sharp pricking pains upon pressure.—12th. Previous to my visit, one from the left eye, which was much less inflamed than the right.—13th. Eyes much improved in appearance. One discharged since my last visit, and another just previous to my departure this morning. As this discharge served greatly to perplex the views at which I shall arrive before I conclude this paper, it may not be irrelevant to notice it. I have mentioned the scrupulousness with which the eye and its appendages were examined in order to elicit, if possible, any clue by which to unravel this enigma, and the fruitlessness of those exertions. It appears then, that on the day of this visit (the 13th), a spider was removed before my arrival. A servant was despatched for it to a neighbour's whither it had been sent for examination. Some time elapsed before her return, during which time I sat in such a relative position to the patient as to preclude all possibility of deception, and I had this day, as was my wont at every visit, made a careful examination of the eye without discovering a vestige of any kind of substance. Upon the return of the servant I arose to depart, at which moment the patient complained of pain, and in a few seconds, by turning down the lower lid I removed another spider.—15th. Eyes extremely healthy and clear. On the 13th just after my visit, the mother removed three spiders, two entire and one broken; also a putrid substance, the precise nature of which I could not define. No others discharged to date.—17th. None since 15th. Right eye more affected; upper lid much irritated and swollen. Left eye healthy.—18th. Right eye still inflamed—discharged a portion of web from the inner canthus.—19th. Eyes the same—another piece of web.—20th. Eyes perfectly natural. After my departure on the 19th, there was removed a sacculum containing ova.—27th. None since 20th until to-day. The left eye being inflamed and painful she was advised by a friend to insert an eye stone, which at its exit protruded one spider of the long-legged kind, entire.—April 6th. None since 27th ult. Eyes healthy and generally improved in their appearance.—13th. None since 6th. Eyes healthy; has used them since my last visit, in sewing and reading without inconvenience.—May 14th. None since 13th of April. Eyes healthy until a few days past; to-day they are weak, lachrymose, and slightly injected. They however improved under remedial measures, and the case terminated.—The total number of spiders removed from commencement were between forty and fifty. During the progress of this very singular case, the treatment was regulated according to the greater or less degree of local or general disturbance. The patient was restored to good health, and continued so uninterruptedly to the date of my leaving Carolina in Nov., 1840.—The doctor adds, in explanation, that the girl, in his opinion, acted under a kind of hysteric monomania—that possibly fragments of spiders were originally present, and that acting under a thence suggested hallucination, she was urged irresistibly to introduce them from day to day.

Rupture of the Diaphragm.—A lad was admitted into the Dreadnought Hospital Ship, having fallen from the rigging of a ship. He survived the accident about five days, the principal symptom being continuous vomiting. On examination of the body after death, the left pleural cavity was found to be occupied by a large distended viscus, which proved to be the stomach. It was in an inverted position, the great curvature pointing upwards towards the clavicle, the posterior portion being in contact with the anterior parietes of the chest. In front of it there was a considerable portion of the great omentum, and about six inches of the transverse arch of the colon, all of which had been forced through a vent in the tendinous part of the diaphragm, large enough to admit the closed hand. The heart was considerably displaced to the right side, and the left lung was much compressed, so that it did not contain any air.

Erysipelas.—Dr. Lanyen, of Lostwithiel, says it will be found upon trial, that the tincture of iodine, as a topical remedy, will be far more efficacious than any of the usual applications, or all of them put together.

Gangrene of the Lungs from Secondary Inflammation.—Dr. R. Lee narrates the case of a woman, whom he delivered by turning, in consequence of placental presentation, with profuse hæmorrhage, and who was attacked the day after with fever. In a few days the breathing became much oppressed, with pain in the left side, which was relieved by bleeding. Four or five days afterwards, the expectoration was free, thick, and purulent; breath very offensive; features sharp and anxious, and the patient died on the 18th day after delivery. On opening the chest after death, an extremely fœtid odour issued from its left cavity, in the lower part of which were contained between three and four pounds of a turbid serum, mixed with portions of coagulable lymph. Superiorly, the lung was glued to the parietes of the chest by recent loose adhesions; inferiorly, the pleura pulmonalis, and corresponding pleura costalis, were covered with a dense coating of coagulable lymph. In addition to this, there was, on part of the surface of the inferior lobe of the lung, a quantity of the same substance in a loose, flaky form, on removing which there presented itself a portion of the lung in a state of complete gangrene; this, about the size of a walnut, forming a black, pulpy-looking mass of very fœtid odour, was contained, with some dark-coloured fluid, in a cavity formed by its separation from the sound lung. On making a section of the parts passing through the gangrenous slough, one half of this fell out of the cavity in which it was situated, the other half remaining attached to the parietes by a few thread-like adhesions. The cavity itself was lined by a layer of coagulable lymph, having the appearance of an uniform membrane. One of the sinuses of the uterus communicated with an abscess in the left ovarium; and the left spermatic vein, which was unusually large and hard, was found to contain pus; its coats were thickened, and its inner surface lined with a layer of coagulable lymph, which nearly obliterated the cavity. These diseased changes occupied the whole course of the vein to its junction with the emulgent, the coats of which were also thickened. and the cavity lined with lymph. The cava was healthy. There was not any trace of peritonitis, or metro-peritonitis. Dr. Lee was inclined, at first, to attribute the attack of destructive inflammation of the lung, to the shock communicated to the system by the operation of turning and by the hæmorrhage, but he was afterwards inclined to attribute it to the previous occurrence of the suppurative inflammation of the spermatic vein, on the authority of Laënnec, who says that a consequence of the presence of too much pus in the blood is the production of inflammation in different organs, and especially in the lungs, which run rapidly into suppuration. Mr. Arnott holds a similar opinion, that the suppurations which occur in different viscera, do not depend upon any shock to the system, but upon the purulent matter, formed in the veins, mixing with the blood.

TO CORRESPONDENTS.

We shall next week give our "Students' Number"—*the last number of the present volume. It will consist of twenty-four pages, being a presentation of an additional eight pages to our readers, without increase of price. The number will thus, for fourpence, contain more, and we hope better, matter than the "Lancet" and "Medical Gazette" present their readers for one shilling. Advertisements cannot be sent too early for a number the circulation of which will not, we anticipate, be less than* 7,000,—*i. e., about three times the circulation of all the other medical journals put together. This will be a good time for subscribers wishing to take the new volume, to enter their names. Our programme of the new vol. will appear next week.*

A pencilling of Bransby Cooper, F.R.S., &c., by Probe, will be given the public in our next number.

Our remarks on the volumes for sale refer to the Medical Times. The price of the first five vols. is 7s. 6d. each; of the two subsequent (enlarged) 10s. 6d. They may be had (except vol. 2) through any bookseller.

W.S.M.—*We should hesitate to assert that calomel might not be the cause of abortion; the proportion of cases, however, would, we think, be small.*

Per fa et Nefas.—*We must decline the communication unauthenticated.*

T.C.—*It is rather a late day to publish the result of a homœopathic enquiry conducted in Austria in* 1828.

K.-*Our inimical friend should be heard with caution. Our* stamped *circulation, as shewn by the last return, is* 800 *per week. Our* unstamped *numbers alone, which (as being cheaper) form the mass of our sale—with our monthly parts—put us above any medical paper, and place us in a situation, with regard to circulation, only second to the Athæneum, among even the more general publications.*

Dr. Clay's account of a new ovarian extirpation will appear in our next number.

M. D. *is perfectly right. We are the only journal which had reporters specially at Manchester the last year, and at Cork this, to furnish us with full and accurate accounts of the medical proceedings. Last year the "Lancet" published passages as original which were smuggled from the "Medical Times," and this it takes from our pages, all the facts forming an unintelligible summary, and tries to evade the charge of plagiarism by the clumsy, and we believe the erroneous declaration, that it was indebted for* medical *reports to general weekly papers.*

Portfolios for the Medical Times.—*Our bookbinder has prepared an ingeniously made portfolio of great neatness, and lettered on the back, in which the numbers of two volumes can be deposited, as they are issued and preserved convenient for reference, and clean for binding. The covers are composed of such strong materials, that the portfolio, with a single number, will stand like a book on the library shelf. The price is 5s. Copies are now ready and may be had by giving an order to any bookseller or newsman, to whom the customary trade allowance is made.*

Other correspondents under consideration.

THE MEDICAL TIMES.

SATURDAY, SEPT. 23, 1843.

———— Ridentem discere verum
Quid vetat?

SINCE our last observations, recommending *disease as the great National Panacea*, we have been harassed with communications, in a few of which our claims to the vast discovery has been doggedly contested. We might say, in reply, with other great inventors who have shared with us the injustice of being denied by their contemporaries the merit of their achievements, that we are above the personal considerations that connect themselves with the system we have laid down; and that, if the country acquires the advantages *we* have marked out for her, we care not who appropriates the glory of the discovery. But in justice to ourselves with posterity, we may, we trust, be allowed to say, in vindication of our originality, that whoever—as Mr. Erasmus Wilson has it—first emitted the idea, it was we who worked it into a system. The elements may have existed before, but it was we who collected them into a whole: the materials existed, it may be, in common life, but it was we who raised from them the building. Our right stands upon the same imperishable basis as Dr. Hall's reflex theory, or Morison's universal medicine. We have found our doctrine (and what is that but making a discovery?), and, after this ennobling feat of industry, we have, like Vespucian Americanus, given the discovery a name of our own. Let them, then, who deny our originality, rail,—no such contemptible conduct will move us from the career of our fame.

We have already shortly exposed the more simple and ordinary agencies by which the machinery of pauper destruction may be carried on. We have now to point attention to the smaller instrumentality, by which the system's greater efficiency may be marvellously aided.

The only places in which we can reach the poor, when not at their homes, will of course be in general manufactories, and in our public establishments. Now, common sense suggests that half our power on their health and constitutions will be lost, if, away from their homes, they could secure an illicit snatch of fresh and balmy air. It is a medicine which, absorbed at every pore, would give the pauper a dangerous advantage in his struggle with disease—an advantage which would, if general, have a terrible effect on the amount of our poor-rates. We cannot enlarge on the different means, but we will submit a few of the more prominent *seriatim*, leaving it to the public authorities' ingenuity to supply such smaller aids as we may, from our want of space and time, omit.

1st., then, let stores, workshops, and factories depend, for their ventilation and cleanliness, on the pure caprice of the owners or managers. Millions of the most dangerous and indigent portion of our population will thus be daily acted on. We have made a calculation, and believe that mortality would be thus increased one-third above its natural standard. Indeed, we can ill estimate the influence of our ill-ventilated workshops and buildings, in producing decay of the pulmonary organ, and contagious fever.

2nd. Let churches and chapels be left without medical or hygienic inspection. If Sunday can be made pestilential, the other days may well take care of themselves. A great aid are, the interments under and round these places of worship. We have traced typhus fevers from this source, which have carried off whole families. We highly applaud the wisdom of retaining crowded burial-grounds that have been in full use for centuries: the same policy should make us legislate that no public place of worship should be without a full-stocked grave-yard. A deficiency this way is an anomaly that should not be tolerated: what is good in one case must be good in the other.

3rd. Let there be no medical inspectors to prevent the long retention of the dead in the private houses of the poor. Corpses are about as useful in spreading contagion there, as in the church crypts and grave-yards.

4th. Let our hospitals be governed by non-medical men, and by parties who can have no interest in keeping the wards in the best order; or providing them with the best medical attendants. If we can only have physicians and surgeons appointed from the great eminence of their private influence, hospitals may become pretty baubles, by which the poor may be cheated into a notion of our benevolence, while they effectually carry out our system. On the point of ventilation, a curious instance has been exhibited in *The Builder* newspaper, of what hospital or suffering patients may be made to endure. Mr. Spencer, engineers' draughtsman, gives us the result of a personal visit to an Infirmary for Diseases of the Chest, near Bishopsgate-street, founded many years since, by Dr. Buxton, and lately under the management of a celebrated lung doctor—Dr. Davis. As a model to other governors of similar institutions, we append a few items of the description :—

The first floor, by far the best in the house, *consists of three rooms, and is occupied by the housekeeper and servants*; the second and third floors intended to be appropriated to the use of those patients who are received into the house. —The front room (second floor) is about 28 by 14 feet, the back room about 11 by 18 feet, and the height of both 8 feet; the rooms on the third floor are of the same dimensions of floor, but scarcely 6 feet high, from which reason it has been deserted as useless; seven beds are made up in the front room, (second floor) and three in the back room, which I need scarcely say are always occupied; each patient is allowed two visitors, crowding occasionally a large number of visitors into a very small space.

To produce an artificial atmosphere, in "imitation of the mild and genial climes of Italy or Madeira," all the chimney-places, except a very tiny one in the front room, are carefully stopped up with sheet iron, to prevent any communication with the external air by means of the chimneys. Two grotesque stoves stand about three feet into the room on sheets of lead, in such close proximity to the patients' beds, that they must suffer the greatest inconvenience from the heat; another of these three-legged German stoves is placed in the back-room.

This kind of stove will frequently attain a red heat, in which state their temperature will be 1,077 degrees Fahrenheit, or just 865 degrees more than the proper temperature for heating furnaces as laid down by Tredgold and others, namely 212 degrees; and in ordinary circumstances the temperature of these stoves will seldom be less than 400 degrees.

In the corner, where the adjoining buildings meet, a space parallel to the staircase, and passing from the ground-floor to a *fixed!* skylight in the roof, is boarded off, and small hinge windows are furnished at each floor; at the

bottom of this air-shaft, on the ground floor, are the *two small privies used by the patients*, communicating by an open drain, with a *large cess-pool in the cellar*, into which the rats have opened several communications. It appears that in this neighbourhood there are no sewers, so that this place must be occasionally emptied; there being no outlet from this shaft except through the small windows mentioned, no one can conceive the abominable effluvia with which this place is continually filled, leaving a thick deposit on the surface of the walls, but ill-concealed by daubs of whitewash. In this detestable place, and between the two privies *is located the domestic water-butt.*

In the winter, when the temperature of the rooms is raised, light, the cooler air in this foul air shaft must be drawn into the rooms continually, and breathed by the patients and other inmates, thus completing a picture of human folly and ignorance, which, it is to be hoped, has few parallels in any city in civilised Europe. —The effects produced on the patients' health are exactly what might be expected.

So we should think—and, therefore, we have the more pleasure in recommending it to those who approve of our "original" system, to consider it a model infirmary. It must be a great agent of death, considering its limited means.

5th. Let a sharp eye be paid to union houses. The commissioners have great power this way, and have, it must be confessed, used them with some little effect. The cutting down of surgeons' remuneration was a splendid stroke in the way of pauper depopulation, The low dieting must be also looked on as no slight assistance. But we doubt not that much more might be done. In infantile life the advantage of unions must be immense. We have recently had some striking proofs, in the management of the Dublin and Marylebone workhouses: and, as further evidence of the power one has this way, we may just mention that in St. Kilda, one of the healthiest of the Hebrides, eight out of every ten children die between the eighth and twelfth day of their existence, all through a salutary absence of ventilation, and the abundant presence of all kinds of filth,—and that, in the Dublin Foundling Hospital, during twenty-one years, ending 1796, out of 10,272 sick children sent to the infirmary, only 45 recovered—an important check to the increase of pauper population, which even the present enlightened age can hardly be said to have improved on.

To be serious. Should any man, charged with a malignant enmity towards his species, address himself to the invention of a system, by whose operation the great majority should be stripped, not of the comforts, not of the urgent conveniences of life, but of its absolute necessaries, and, in their place, be visited by the miseries of disease in their most loathsome and desolating forms,—by what searching ingenuity, sharpened by the venom of his hatred, could he build up one more adapted to the purpose, in every appointment, than that we have, in bitter playfulness, proposed, or one that in its working could more loudly declare the *philanthropical* source from which it sprang. Now, supposing such a system to be found in being, either at home or abroad, to what motive would the mind of an observer refer its existence? Could he conceive that anything so calamitous was ever suggested by the humanity of the Government under which it was permitted? Hardly! Could he, then, imagine that it existed without the assent, or even the knowledge, of that Government? If it did with the knowledge, the assent must be presumed: if without it, what kind of Government must that be, which should fill the chair of office in ignorance of a system affecting the majority of those who are governed! Might he refer it to the policy of the State's head? We think not —for as there is no policy without some end in view, what end this could have, were it not the disposal of the surplus portion of the community, we confess ourselves not sufficiently ingenious to devise.

No matter what the motive that demands them, no matter how great the ignorance of their existence, their evils, the component members of the system we have mentioned, should not be suffered to continue! As long as they are, they entail, first, on the country, degradation in the eyes of neighbouring States; next, on their immediate victims the horrors of life supported under the endurance of all that tends to rob it of that native sweetness it possessed, and which, turned into gall, is the more bitter for the change; thirdly, on the Government that permits them the indelible disgrace of large confidence unscrupulously betrayed; and, lastly, the scandal of enlightenment, that, wherever she has set her foot, humanity has suffered by her approach! Such are the consequences entailed on this country, for here, in England—much boasted, self-sufficient England!—even here is this system existent; and with such defiance of controul, saving that of its own innate luxuriance, that it is seen alike healthily developed in the presence, as well as in the absence, of Government interference. Nay, it is a question, and one that seems tending towards decision in the affirmative, whether it does not flourish more by the acts than even by the negligence of our rulers; and, in proof that it does, not a week, not a day, passes by, but our attention is called to the wonderfully effectual manner in which, under the direction of those politico-economical authorities, the Poor-Law Commissioners, it ravages the country.

But whether in the presence or the absence of the Government is not the question. We are sensible of one fact alone—*it exists!* Upon that fact we make but one observation—it is to the disgrace of our country and Government that it does.

PARTIAL PARALYSIS.—In all cases of partial paralysis, the surgeon of the Dreadnought has detected a line of increased nervous sensibility to the touch, at about an inch in extent round the limb, body, or half body, exactly where the nerves terminate, whose origin is above the portion of the cord diseased.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 14th Sept. 1843.

At the last meeting of the Societé du Temple, M. Ladasquié announced that the unanimous opinion of the members of the Société Medicale d u 12° Arrondissement was, that the death of the child in utero is often caused by syphilis, and that the medical attendant is fully authorised to employ an anti-venereal treatment, if either of the parents have at any period been affected with lues venerea. This, however, did not appear to be the opinion of the members of the Socicté du Temple, nor that of M. Ladasquié.

A man entered the ward of M. Louis, Hospital Beaujon, who was labouring under dysenteria, accompanied with bloody stools. He was attacked with pneumonia, as he attained convalescence; venesection could not be employed, in consequence of the weak condition of the patient. M. Louis prescribed tartar emetic, in doses of 6 grains per draught; on the second day, the emetic produced no nausea, as on the first day, and by continuing the doses, not only the pneumonic, but also the abdominal affection, yielded, and shortly after, the patient left the hospital perfectly cured.

A person named Lasplace, after obtaining the honour of a medical diploma, quitted the profession, (after five year's practice) and became traveller to a commercial house; but having since then turned *chevalier d'industrie* (swindler) he was this week brought up on a charge of stealing plate at Orleans, Blois, Tours, and Beauvais, and condemned to six months imprisonment, and to ten years *surveillance de police.*

In two treatises just published by M. Bischoff, Professor of Physiology at the University of Heidelberg, "On the separation and fecundation of the ovum in man and in mammalia in general," M. Bischoff says, "that the separation of the ovum from the ovarium is produced by coitus, and that this takes place in the bitch twenty or twenty-four hours after the act, and in the rabbit 9 or 10 hours. Subsequent experiments proved to him that these conclusions were erroneous, and that it was effected without the intervention of the male. If we extirpate the uterus, leaving the ovaria and tubæ fallopianæ in the natural position, or if we prevent the approach of the male, the animal experiences as usual the desire of the union of sexes; the vesicles of Graaff increase in size, the vesicle of Purkinge disappears; the ovum comes to maturity, is separated from the ovarium, and enters the oviductus; the corpus luteum is visible under an effusion of blood. The development of the ovum proceeds no further, as fecundation has not taken place. It is thus clearly proved, first, that two circumstances are necessary in order that conception may be accomplished;—the action of the semen on the ovum, and the maturity of the ovum; second, that coitus is not the cause of the separation of the ovum from the ovarium; third, that fecundation takes place not only in the ovarium, but likewise in the oviductus; fourth, that the corpora lutea may exist without having been preceded by conception; fifth, that there is no material difference between catamenia and the development of venereal desire in animals, both of these phenomena being a periodical excitement of the genital organs, caused by the augmentation of a vesicle of Graaff, and the separation of the ovum; sixth, that conception takes place when the ovum is arrived at maturity, which generally is immediately after the catamenial flux; should it occur at another period, it is probably owing to the following causes. (*a*) Because it takes place just before this evacuation, or some days after the separation of the ovum, and while it is still contained in the oviductus; (*b*) because the semen retains its prolific qualities some days after being deposited in the female genital organs; (*c*) because the ovum may be brought to a state of premature maturity by the excitation caused by frequent coitus.

Prof. Chomel, speaking of Bright's disease, states, that the dropsy commences thus: the face becomes bloated, the legs swollen, the former more in the morning, the latter in the evening; the swelling

gradually extends to the thighs and the abdomen; ascites takes place very late, and is generally produced by an affection of the liver, which complicates the original disorder. To discover the albumen in the urine, it must be mixed with an acid, especially nitric acid, and then boiled. The liquid becomes muddy, and full of albuminous clouds. The remedy he employs is a decoction of horse-radish.

M. Mondien has just published several cases of intermittent disorders. First, intermittent fever, the crisis coming on every eighth day; second, diabetes, existing first every second day, and then every eighth day; third, intermittent sciatic neuralgia; fourth, intermittent pneumonia.

M. Jadelot, of the Hospital des Enfans, called the attention of his pupils to a disease characterised by an involuntary, permanent, and forced contraction of the fingers, sometimes complicated with that of the wrist, toes, or instep. It may be primitive, sympathetic, or symptomatic. The causes of the two first are: first, predisposing, viz., age from four to ten, sex, especially the female sex, nervous temperament, a weak constitution, or one deteriorated by chronic disorders; season—summer, during great and sudden changes of temperature; onanism, unfavourable hygienic causes. Secondly, occasional causes: viz., fright, anger, or any sudden moral emotion.—Symptoms. First, local: fingers sometimes bent at a right angle, at others, at an acute angle with the palm of the hand, the phalanges remaining always rigid, with an impracticability of straightening them without extreme pain. Often, the wrist is bent; when the disorder is slight, it is confined to the upper members of the body; when intense, the inferior extremities are also affected, the foot being forcibly extended, and the toes bent towards the sole of the foot; second, general: the children become dull and fretful, and sometimes scream violently; if the disorder is complicated with a cerebral affection, convulsions, delirium, coma, &c., are to be observed, with pulmonary or abdominal affections, cough, diarrhœa, &c. &c. The disorders which may be mistaken for the above, are contractions symptomatic of diseases of the spine; the general and some local symptoms are, however, sufficient to characterise it. The prognostic would be serious were we to consider the number of children who die affected with this malady, but death is generally produced more by complication of this disease with others, than by the disorder itself. The treatment must be varied according to the constitution of the patient. If he is strong, antiphlogistic, emollient remedies are necessary; if weak, tonics. In general, the following may be employed advantageously:—slight anti-spasmodic ptisans, warm baths, dry frictions, or with camphor liniment. If these do not produce the requisite effect,anti-spasmodics may be administered internally, viz., oxidum zinci, or extractum hyosciami; sometimes the disorder is produced by the difficult establishment of catamenia; in such cases, ferruginous and tonic remedies, combined with derivatives to the lower extremities, are useful. As to the nature of the disorder, M. Jadelot is of the same opinion as M. Rilliet, and M. Barthez, that the disorder is produced by a functional derangement of the nervous centres.

Academy of Sciences—Sitting of 11th July.—M. Maissiat read a memoir "On locomotion in man and animals,"forming the suite of a work presented by him to the Academy in 1842, on the erect position in animals. The conclusions are, first, that if locomotion takes place on a horizontal surface,the muscles expend only the sum of force necessary to overcome the mechanical resistances; second, if on an inclined plane, muscular action differs according as the individual ascends or descends, offering in the latter case a negative character. — M. Jules Rossignon addressed a note, in which he states that copper is to be found in the normal state, not only in the blood and muscles of man, but likewise in the organs of a great number of domestic animals, and in many vegetables employed as ordinary food, viz., wheat, sorrel, spinach, tea, coffee, chocolate, &c.

Academy of Medicine—Sitting of the 12th Sept.—M. Londe informed the Academy that the President and Committee of the *Societe Medicale d'Emulation*, had had an audience of the prefect of police, in which M. Cornac exposed the fact of the dilapidated condition of the tomb of Bichat, in the cemetery of St. Catherine (Clamart) and requested his assistance, in order to obtain from the *Conseil Municipal* a portion of land in one of the public cemeteries, to which the body might be removed, and a tomb erected to his memory. Before promising, the prefect asked if any of the remaining members of Bichat's family were able to do it. To this M. H. Larrey replied, that the only surviving members were a brother and a nephew, both M.D.'s, but that their pecuniary circumstances rendered their undertaking the removal quite impossible. The prefect then said that he hoped to obtain the assent of the *Conseil Municipal* to the demand made by the *Societe Medicale d'Emulation*, and requested a petition to be sent to him to that effect next November. M. Londe then said that the Academy ought to follow the example thus given; which proposition, after some remarks from M. Velpeau and M. Royer Collard, was unanimously voted.—M. Villeneuve read a report on a memoir of Dr. Castelly, "On a case of gastrotomia," performed on account of the bursting of the uterus during labour. For twenty-four hours nothing particular occurred, when all at once, during a violent pain, the midwife heard a sharp crackling noise, and on examination found that the uterus was torn, and that the child had passed into the peritoneal cavity. M. Castelly was then called in, but, owing to the distance at which he lived, could not reach the patient until several hours after the accident. He first endeavoured to extract the child by the vagina, but, failing in the attempt, he had recourse to gastrotomia, and by this operation saved the lives of the mother and child. Professor Velpeau then said that in such cases he thinks the operation might be avoided, or at least ought not to be performed immediately, but only when danger appears to be imminent. Generally, a part of the child is caught in the opening, by which it may be seized and drawn back. It happens frequently, when the uterus is torn inferiorly and posteriorly, that the child escapes entirely from its interior, but in these cases the hand is easily introduced, the child soon extracted, and gastrotomia becomes superfluous. As to the noise produced by the bursting of the uterus, Messrs. Velpeau, Capuron, Gerardin, and Baudelocque quote irrefragable examples.

Garland de Beaumont, D.M.P.,B.L. & S.
Honorary Physician to the Spanish Embassy.

REVIEWS.

The Chemist for September.

In one respect there is an improvement in this journal: it appears this month without any article from the pen of the editors. It is made up of translation or extracts, about one-eighth part being taken from the Medical Times, without the conductors troubling themselves with the frigid formality of an acknowledgment, a compliment occasionally penned us by the editor of the *Lancet*, and for which we are duly grateful. In return, we shall borrow the following translation from the French chemical journals:—

Treatment of Schirrus and Cancer.

Reitz treats schirrus and cancer in the same manner when these diseases appear to be the consequence of a dyscrasy of the humours, when surgical operation is not indicated, or when it may be attended with danger.

His remedy, known under the name of Reitz's Acid Compound, is prepared in the following manner:—

℞ Nitric acid	- - - - - -	125 parts.
Hydrochloric acid	- - -	8 ,,
Sulphuric ether	- - - -	8 ,,
Borate of soda	- - - -	6 ,,

These different substances are mixed in a glass bottle of the capacity of from 500 to 700 grammes, which must be imperfectly corked, and left to itself for a few hours. In this interval, vapours and numerous bubbles of gas are disengaged. When the mixture has acquired a greyish tint, it is poured into small phials.

It is employed internally, externally, and in injections.

For internal use—One part of this mixture is diluted with two parts of alcoholised sulphuric ether, and ten drops of it are administered in a sufficient quantity of water, suitably sweetened.

For external use—Four grammes of the mixture are added to sixty grammes of sweet fat oil, and a liniment is formed by agitation.

For injections—Two grammes of the mixture are diluted with five hundred grammes of distilled water, and tincture of opium is added to it in such proportion as the ease may require.

Remedial Application for sore Nipples.—By Dr. Dobrowolsky.—Dr. D. recommends the application of the following mixture to chaps of the nipple:—

℞ Balsam of Peru	- - - -	4 grammes.
Rectified spirit	- - - -	30 ,,

The whole of the ulcerated surface of the nipple is anointed with it, by means of a hair pencil, after the nurse has given suck. Before presenting the breast to the child, it is necessary to wash it with tepid water, in order to remove the layer formed by the liniment.

The following is a further prolongation of the interesting discussion between Liebig and the principal French chemists, on the fattening matter in the aliment of herbivora. We have given the former debates: the present paper is by Liebig:—

On the Formation of Fat in Animals.

At the sitting of March 6, M. Dumas expressed himself with respect to the opinion which I have formed on the origin of fat in herbivorous animals, in the following terms.

"As soon as he was acquainted with our analyses of provenders, Professor Leibig hastened to repeat them, and in this case, as in that of maize, he has ascertained their accuracy; he was, therefore, mistaken in denying the existence of fatty matters in the aliments of herbivora. But he now states other objections to the opinions which he combats. It is no longer a question of the total absence of fatty matters in those aliments, but the proportions and properties of these matters."

I may be allowed to remark to the Academy, that the analyses of MM. Dumas and Payen which have come to my knowledge, are reduced to a determination of the matters soluble in ether which hay and maize contain. I am ignorant of the other analyses of these gentlemen, which have led them to admit that the grass and roots eaten by cows contain butter, and that the food given to cattle, contains beef fat. I have denied and I again deny the presence of fats (combinations of fatty acid with glycerine) in the nourishment of the cow and of the ox; I deny the presence of bile (or rather of the matters soluble in ether, contained in bile) in the same nourishment; I deny the presence of fish oil and of spermaceti in sea plants; but I voluntarily admit, with fifty other chemists, that grass and green leaves contain green wax, commonly called chlorophylle, and my own investigations have put me in a position to confirm the discovery of the excellent observer Proust, that provender, the green leaves of cabbages, of the Graminaceæ, cherries, and prunes, contain a white wax.

I am, indeed, astonished that the presence of this wax in hay and potatoes should have escaped the observation of such experienced chemists, for they have made no mention of it in the two memoirs which they have read before the Academy; and it was only after I had called their attention to this wax by sending my memoir, from which M. Payen quoted at the sitting of the 6th of March, an incorrect passage, that they hastened to modify their new theory. I am, in fact, inclined to believe that M. Dumas, in giving his opinion concerning the origin of fat in animals, had not made any experiment on the subject, for he informed the Academy at the same sitting, that he, M. Boussingault, and M. Payen, had simply adopted the plan of Gmelin and Tiedemann, who suppose the fatty matters to be ready formed in

the aliments. The avowal of these gentlemen, that this theory belongs not to them, but to my illustrious countrymen, appears to me somewhat late; but it is true that they have now to partake a certain responsibility.

In the experiment which I have related in my letter, a cow which ate, on the estate of M. Koch, at Giessen (15 kilogr. of potatoes and 7 kilogr. 500 of hay) received in its food in six days, according to my analyses, 756 grammes soluble in ether, and in its excrements the same cow, rendered in six days 740 grammes of matters soluble in ether, that is to say, very nearly all that had been consumed. The cow in question furnished M. Koch, in six days, a quantity of milk, equal to that which M. Boussingault obtained, in his land at Bechlebronn, from a cow submitted to the same regimen.

It is impossible to draw from my experiments any other conclusion than the following:—The fatty matters contained in potatoes and hay contribute nothing to the formation of butter, since they pass out in the fœces.

In my memoir, which I have sent to MM. Boussingault, Payen and Dumas, I say that the substance which is extracted from hay by ether, consists of chlorophylle and a peculiar wax, different in its properties from bees' wax: it has the greatest resemblance to the waxy matter so abundantly collected from the leaves of the sugar cane, by M. Avequin, a matter to which M. Dumas gave the name of *cerosie*, and which was analysed by the same chemist.

The wax I have found in the fœces of the cow, in the same state and with the same properties it possessed in hay.

My experiments are not, therefore, fictitious,—as M. Dumas would make the Academy believe,—but real. They prove that the waxy matters contained in the leaves of plants, in passing into the body of herbivorous animals, are not forced to undergo in their blood the influence of oxygen, and do not experience the commencement of oxidation from which steäric, margaric and oleic acids result.

In my work on *Chemistry, applied to Physiology and Pathology*, I have described, in detail, the experiments of M. Gundlach, at Cassels (not those of Huber, as M. Payen is pleased to believe), which show that for 20 parts of honey consumed by bees, they furnish 1 part of wax. Gundlach again shows that wax is also produced when bees are fed with cane sugar, a result which is not astonishing, since it is known that honey contains grape sugar.

MM. Dumas, Boussingault and Payen, explain the formation of wax in the body of bees fed with honey, in a very ingenious manner; these skilful chemists are inclined to believe that it is with a bee as with a nurse. If the latter finds in her aliments the fatty matter and proteïn which her milk requires, she produces for the child, and her health does not suffer from it. If, on the contrary, she be entirely or partially deprived of these fatty or albuminoid aliments, she certainly still produces milk, but it is at the expense of her own substance that milk is produced in such a case."

In cows fat is produced, therefore, according to MM. Dumas, Boussingault, and Payen, from the wax contained in hay.

In bees nourished with sugar, it is from their fat that wax is formed.

From the foregoing, it will be very curious to examine whether sugar of milk is wanting in the milk of a nurse whose milk is produced at the expense of her own substance, or whether it is produced at the expense of the fat or of the albuminous matters. It is a physiological fact of the highest importance, that according to my analyses, herbs and seeds of the environs of Giessen, which produce in the body of cows the same effects as at Paris, differ so much with respect to the fatty matters which they contain, from those of the environs of Paris. The fibrin also at Paris presents another composition than at Giessen: and the most curious discovery is doubtless, that the legumin extracted from peas, lentils, and beans in Paris, dissolves in acetic acids and contains 18 per cent. of nitrogen, whilst the same matter, prepared according to the same method at Giessen, is insoluble in that acid and contains only 14 per cent. of nitrogen.

M. Dumas remarked that at the point at which this discussion had arrived, it was necessary to lay aside reasonings and to resort to facts; it evidently appertained to the department of practical agriculture, to which it belonged definitively to solve it by well-combined experiments, and which may find a source of considerable profit in the application of the views, whichever they may be, whose justice will remain demonstrated.

He, however, requested permission of the Academy to add a few words to the letter of Professor Liebig, to clear up the difficulties which it raised *de novo*, as well as to supply the absence of M. Payen, whose health had forced him to quit the sitting.

1st. Professor Liebig has said, and repeats, that between wax and common fatty matters there is a profound line of demarcation, since wax is insoluble in the alkalis, and is not susceptible of being converted into fatty acids similar to those which ordinary fatty bodies contain. It would be easy to prove that we have here long known the contrary concerning this point, which does not seem to have been the subject of personal experiments on the part of Professor Liebig.

I have been commissioned this very day to present to the Academy the results of a work on this subject, which has been studied with the greatest care in my laboratory, by M. Lewy, of Copenhagen; and this coincidence is so singular, that I must add that it was at the same time that M. Flourens (one of the perpetual secretaries of the Academy of Sciences) communicated to me Professor Liebig's letter, and that M. Lewy announced last year that he was occupied with these investigations.

M. Lewy has ascertained, as will be seen in the detailed memoir which I present in his name, that wax is really soluble in potassa, and that it is converted, by the action of this alkali employed at rather a high temperature, into steäric acid, or at least into an acid fusible at 158 degs. F., and endowed with the exact composition of steäric acid. Every one knows how easy it is to change steäric into margaric acid. Thus, the two principal acids discovered by M. Chevreul, in the most common fatty bodies, may be derived from wax by simple oxidising influences, as we have admitted.

Without affirming that the wax of provenders contributes, rather than the fatty matters which they contain, to the fattening of cattle fed with them, it may be said, with regard to wax, the objection of Professor Leibig is unfounded. The question remains entire, and we persist in thinking that the direct experiments by which we have endeavoured to solve it, were not useless, and we shall continue them. Moreover, Professor Liebig will regret all the insinuations which his letter contains, when I prove, that, ever since the spring of 1842, I have publicly expressed the opinion concerning the part performed by the waxy matters, which I declared before the Academy on the 6th March, of the present year, always rendering to Tiedemann and Gmelin, the part which is due to them in this theory.

2. Without denying the possibility of the formation of fatty bodies by certain fermentations of sugars, we repeat that nothing proves it, and we regard as more simple and more probable, the entirely vegetable origin of the fats of animals. If we have adopted this opinion, it is not because we were ignorant of Huber's experiments on the formation of bees' wax. These experiments, which were made sixty years ago, are very numerous, and would be very decisive, if account had been taken of the losses sustained by the bees. Huber fed his bees with sugar as well as with honey; he fixed at 1-20th the weight of wax furnished by these aliments. Thus, he has, in all respects, an indisputable priority over M. Gundlach, to whom M. Liebig persists in attributing the merit of these observations, and whose work is, at the most, but two or three years' old.

Such is, doubtless, the motive which induced M. Payen to quote Huber, and not Gundlach; and nobody will admit, that, by repeating in 1840 experiments already made in 1780, the first discoverer can be deprived of his merit.

3. M. Liebig seriously touches, in his letter, on a question on which I request the Academy's permission to dwell for a moment.

I admitted, in my course of lectures last year, at the School of Medicine, of unpublished expements which had been communicated to me, and of which I shall give the detail at the next sitting, that sugar of milk may be produced by a special fermentation of ordinary sugar. I had very naturally concluded from this, that such is its origin in the milk of herbivorous animals, and that the milk of carnivorous animals should be free from sugar of milk. Now, as until then no analysis of the milk of carnivora had been made, I thought that I ought to devote myself to it; but the attempts which I have made to procure it, have hitherto proved unavailing, because I wished to operate on sows, which, as regards regimen, are well adapted to the experiment, but from which it was impossible for me to draw milk, as I stated before the Academy, in reading the memoir "On the Neutral Nitrogenous matters of Organisation," common to myself and M. Cahours.

Sows cannot be milked; and, in endeavouring to draw the milk by means of cupping glasses, blood is extracted sooner than milk.

But, I hope, that the very interesting question which I raised, and which Professor Liebig here re-produces, will soon be solved, M. Delafond, Professor at the School at Alfort, having been kind enough to promise me the means of accomplishing the experiment which I had in view, namely, the analyses of the milk of an animal fed sometimes with meat, and sometimes with vegetable aliments.

4. Finally, I come to the essential object of Professor Liebig's letter, which assures us he has made a real experiment on the production of milk, whilst it appeared to M. Boussingault and myself, that his letter of the 6th of March was a simple reproduction of an article, in which it was manifest that he had contented himself with combining two distinct experiments of M. Boussingault himself, with some determinations executed at Giessen, on the quantity of fat contained in provenders and dung. I confine myself to observing, in the face of this affirmation, that, if Professor Liebig's experiment be real, it is in full contradiction of that which has served for controlling our views.

Mesmerism; its History, Phenomena, and Practice: with Reports of Cases developed in Scotland. By William Lang.—Edinburgh: Frazer and Co.

This is a highly interesting volume, and cannot but fail to prove acceptable to the public. Mesmerism is undoubtedly fast gaining ground, and the body of evidence in its favour, arranged so lucidly and ingeniously by Mr. Lang, cannot fail to accelerate its onward progress. Mr. Lang blames the profession for its seeming listlessness, or even hostility to the pretensions of the new doctrine: but, notwithstanding all his enthusiasm, Mr. Lang must be aware, that many extenuating circumstances might be adduced in behalf of the profession; for, in truth, if a thorough scepticism can ever be justified, it is on this very subject; for the "facts" related are so very inconsistent with ordinary observation, so contrary to the usual course of things, so "miraculous," indeed, that no man ought perhaps to believe them upon the evidence of another person. The intelligent author must know, that in all such cases, the sources of fallacy are numerous, and the difficulty of drawing correct conclusions, consequently great, not unfrequently insurmountable. As a body, the profession is justified in the position they maintain, with respect to this doctrine, provided their disbelief shut not out enquiry. Credulity here is infinitely more dangerous to truth than philosophic scepticism. Knowing this, we cannot blame the profession for whatever caution they may manifest upon the subject; but we say,

let those who have tastes and talents for the investigation, persevere, and when the proper time arrives, the profession will shew, that it has neither been insensible to all that is passing around it, nor forgetful of the interests of the public.

In the volume before us, the whole subject of mesmerism is treated of in a succinct and very pleasing manner, and although the author does not indulge in theoretical speculations, regarding the cause of the mesmeric phenomena, yet there is no opinion of this kind to which he has not referred. The book, however, is eminently practical, and consequently more likely to take with the public, and ultimately to prove useful to science. To impart some idea of the contents of the volume, it may be stated, that we have the following important topics brought in succession under observation:—a historic sketch of mesmerism; the theories of Mesmer and others; the mesmeric phenomena and states; the application of mesmerism to practical medicine and surgery; eight well drawn up and highly interesting cases, in which the mesmeric phenomena were developed by different operators, and observed respectively by numerous and intelligent witnesses; the mesmeric processes, or various modes by which the mesmeric phenomena may be induced; phreno-mesmerism, or the application of mesmerism to the induction of phrenological manifestations, but regarding which the author is somewhat sceptical; the effects of mesmerism upon the brute creation; and lastly, some hard hits unmercifully dealt, both to the clerical and medical professions, for their opposition to the doctrine.

Should our space permit, we may at an early period transfer to our pages some of the more interesting of the cases contained in the volume. In the meantime, we can strongly recommend the work itself to the curious, and to all interested in the process of mesmerism.

Observations on the Principal Medical Institutions and Practice of France, Italy, and Germany, &c. By Edwin Lee, M.R.C.S. &c.

This is a work of great utility. It was long wanted by persons thinking of a medical sojourn in the countries whose medical institutions it describes, and it has been so ably compiled by Mr. Lee, that while it has all that can satisfy such enquirers' curiosity, or solve their doubts, it contains much that the most experienced practitioner will find both of interest in the perusal, and of service in his professional duties. The nucleus of the book appeared some years since, but renewed, and more extended continental travel has furnished so much new material, that we may consider the work before us as a new publication. It consists of four divisions: in the first, we have a view of the French medical institutions under the sub-sections of, first, "a short general view as to medical studies in Paris; second, a description of the Parisian hospitals—their medical officers, and peculiar practice, with illustrative cases; third, the same thing for the French provincial hospitals. In the second, the different medical institutions of the different cities of Italy are examined; in the third, those of Germany, and the book closes with a parallel view of English and foreign medicine and surgery. The book is so much an elegant record of facts carefully observed, and of opinions judiciously formed, that the duty of the impartial critic is limited to praise, and quotation; terms which, to the tasteful reader of the following extracts, will probably appear correlative. On the different Parisian hospital professors we have the following observations:—

In M. Dupuytren, for many years the principal surgeon of this hospital, were presented a tact and quickness in seizing indications of treatment, joined to a precision of diagnosis, and a dexterity in the performance of operations rarely met with. By his genius, the pathology of several diseases, formerly but little understood, was elucidated, and the advantages of many improved methods of treating surgical disease which he employed, have, since his death, become more manifest. Although a knowledge of the opinions of this celebrated professor is pretty extensively diffused by the publication of his *Lecons Orales*, yet the following brief sketch of his views on some important diseases, may prove acceptable to those who have been debarred from a perusal of his work.

The nervous or traumatic delirium, which frequently supervenes on accidents and operations, and which, like delirium tremens, is marked by insomnia, continual restlessness, and absence of fever, was treated by M. Dupuytren by enemata of a small quantity of mucilaginous liquid, containing from six to twenty drops of laudanum, repeated three or four times, if the symptoms persisted, at intervals of six hours. This small quantity of laudanum, so administered, produces a more marked effect than three times as much taken by the mouth, and seldom fails to induce sleep, after the failure of other means. This kind of delirium leaves no traces of its existence after death: it most usually occurs in men of a nervous habit, and occasionally in women, but has not been observed in children.

Wounds of arteries, if recent, are best treated by placing a ligature on the vessel between the wounded part and the heart. The only exception to this rule is when the artery is wounded near the extremity of the limb; in which case, in consequence of its free communication with inosculating branches, it is requisite to place a ligature both above and below the wounded part. A similar proceeding is required when the lesion of the vessel is of long standing, as the edges of the wound are then incapable of adhesion.

Gonorrhœal ophthalmia mostly occurs from inoculation, but may supervene on suppression of the urethral discharge, especially if the patient have been at the same time exposed to cold, or other exciting causes of ophthalmia. It should be treated by general and local depletion, revulsives, and emollient lotions. These measures are, however, insufficient, unless combined with the insufflation of a pinch of finely-levigated calomel, upon the ocular and palpebral conjunctiva, once or twice a day. One or two drops of laudanum should also be dropped between the eyelids in the evening. The purulent ophthalmia of infants is essentially the same disease, and should be treated in a similar manner. Strumous ophthalmia was considered by M. Dupuytren to depend on inflammation of the retina, and was treated by the internal administration of belladonna, combined with other means indicated by the symptoms. From three to eight grains of the powder, or from one to three grains of the extract of belladonna, were divided into six doses; the patient took one of these every two hours; to prevent narcotism, either general or local, Seltzer water was usually administered at the same time.

Gangrena senilis is not, as its name would imply, restricted to old persons. M. Dupuytren has termed the disease *Gangrene symptomatique*, believing it to depend upon inflammation and consequent obliteration of the arteries of the limb,—ossification of the vessels, to which it was formerly ascribed, being only an accidental coincidence,—the treatment consisted in venesection, repeated according to the urgency of the symptoms, low diet, cooling beverage, opium, and other sedatives, with emollient cataplasms, to the affected part. By this treatment the average mortality is said to be as one to four. Previous to amputating a part affected with long standing disease, M. Dupruytren frequently established suppuration by means of blisters on some distant point. It was also his practice, after amputations, to wait an hour, sometimes longer, before dressing the stump: by this plan union by the first intention took place more readily, and the likelihood of hemorrhage was diminished.

In prolapsus ani, M. Dupuytren excised two, three, or more folds of the skin on the margin of the anus, on either side. A similar operation was recommended by Mr. Hey. No dressing is required, and the recurrence of the disease is effectually prevented.

Fissures at the margin of the anus may be divided into three kinds:—1st, those external to the sphincter, which are not very painful, and do not occasion spasmodic contraction; 2nd, those situated within the sphincter, affecting principally the mucous membrane—this kind causes tenesmus, and great pain, especially on the patient's going to stool; 3rd, those placed on the same level as the sphincter, are more serious and painful than the other kinds, which may generally be cured by simple dressings, emollient lotions, and sedative applications; whereas this variety requires the division of the sphincter on the fissure. M. Dupuytren was in the habit of prescribing an ointment composed of extract of belladonna and acetate of lead, of each a dram, to an ounce of lard, for alleviating the pain in these diseases.

M. Dupuytren preferred excision to the ligature for the removal of uterine polypi, in consequence of the greater facility with which the former is effected, and the few inconveniences it occasions when compared with the latter method. The patient being placed in the same position as for lithotomy, a speculum is introduced into the vagina, so as to exhibit the tumour, which is then seized with a strong four-hooked tenaculum, with long handles, (*pinces de museaux,*) and gradually brought down through the inferior orifice of the vagina, the patient being recommended during the traction to strain as if in labour: on the division of the pedicle, the uterus immediately regains its usual situation. The operation is not in general very painful, and bleeding to any extent very rarely occurs.

M. Roux is justly considered as one of the most expert operators in Europe, and is the author of several works and memoirs on various points of surgery: he has simplified and facilitated the performance of some operations formerly but seldom undertaken, on account of the difficulties which they presented, as staphylography, perineoraphy, &c. His manner towards patients is kind and considerate. M. Roux, however, in common with the majority of French surgeons, has seldom recourse to medicine in the treatment of surgical disease; hence, in my opinion, the greater number of operations, and the greater mortality among the operated in Parisian than in British hospitals. During the periods of my attendance in his wards, several interesting cases have fallen under my observation, a few of which I have recorded, as serving to illustrate his practice. Among others, was a fracture of the neck of the thigh bone, in a female aged seventy, in which the double inclined plane was used. Although M. Roux believes that this fracture unites by bone, yet in this instance, on account of the age of the patient, he contented himself with keeping the limb at rest until the pain and swelling subsided, after which she was allowed to get about on crutches, as recommended in similar cases by Sir. A. Cooper. In fractures of the leg the limb is placed in the extended position, the ordinary apparatus, viz., the many-tailed bandage, and a junk, formed by a broad piece of linen cloth, passing beneath, and enclosing narrow lateral splints, which are approximated to the limb, and fixed by tape bands; long compresses, or bags filled with chaff of oats, being placed within them, to prevent undue pressure. M. Roux (and, indeed most of the Parisian surgeons) applies the dressings himself in important cases, and especially excels in the application of bandages. Dressings are for the most part simple; a linen rag, perforated with holes, and smeared with cerate, is applied to suppurating wounds, over this charpie, to absorb the matter, unless when this is too abundant, or the state of the wound requires it, in which cases poultices are employed. M. Roux prefers lithotomy in cases of stone, using the gorget, or bistouri caché. In fistula ani he exercises the fistulous tract, after division of the sphincter: considering that this method prevents the recurrence of the disease. He operates cataract exclusively by extraction, and only at stated seasons. One of the last opera-

tions which I had an opportunity of seeing M. Roux perform, was for a carcinomatous tumour of the tongue, seated near its root. As the part could not be reached by the mouth, the soft parts were divided beneath the lower jaw, by incisions extending laterally along the bone, and the tongue with the tumour drawn out beneath with the *pinces de museaux*. The diseased portion was then excised, and the wound was closed by sutures. The patient lost a good deal of blood, and fainted during the operation; he did not survive more than three days. A similar operation was performed with success by the professor of surgery at Pisa, Regnoli, which induced M. Roux to adopt it in this instance.

M. Breschet, professor of anatomy, is extensively known by his researches on various points of anatomy and surgical pathology. His method for the cure of varicocele, by compression of the veins, variously modified, was pretty generally adopted; but many practitioners now prefer the ligature of the vein, without implicating the skin, which method scarcely admits of description, without the operation being at the same time demonstrated.

We have the following account of LISFRANC, the *brusque* surgeon of La Pitié:—

M. Lisfranc is the principal surgeon, and is well known in Europe by the numerous improvements he effected in operative surgery; but of late years he has endeavoured to impress upon the minds of those who attend his practice, the importance of preventing occasions of operating, by having recourse, at an early period, to constitutional measures, combined with local treatment. His employment of internal remedies, however, falls far short of the English practice in surgical diseases: he does not, like some others, adopt exclusive and invariable methods of treatment in particular diseases, but being aware that the same disease not unfrequently requires a different, and sometimes an opposite, mode of treatment in different individuals, he varies his practice according to the condition of the patient, and to existing circumstances, and is very successful in the results which he obtains. M. Lisfranc has charge of two men's and one women's ward, a large proportion of cases in the latter being marked as disease of the uterus; many of these patients are, however, young women affected with superficial erosion of the os tincæ, and other slight affections, which are curable by a few days' rest, and appropriate treatment: the means resorted to in uterine irritation, ulceration, hypertrophy, and other affections of this organ, being chiefly confinement to the recumbent position, occasional venesection to the extent of three or four ounces on the principle of revulsion, small doses of cicuta; and in ulcerations, cauterization every six or eight days, with nitrate of silver, and in some cases with a solution of mercury in nitric acid—*nitrate acide de mercure*. It scarely ever happens at present that M. Lisfranc has recourse to excision of the cervix; as, according to his account, patients now apply at an earlier period for relief, and consequently many cases, in which amputation was formerly required, are cured by other means. In the former edition of this work, I said there was little doubt that amputation of the cervix of the uteri had been performed in many instances where it might have been avoided; and this is now acknowledged to be the case. The history of several of these operations, performed by M. Lisfranc, was published by his *interne*, M. Pauly, which exhibits results very different from those stated in the Academie de Médecine by M. Lisfranc himself, and tend strongly to impeach the veracity and good faith of this eminent surgeon, who has not thought proper publicly to notice or contradict the statements made in M. Pauly's work. In forming a proper estimate, however, of the degree of credit to be attached to these statements, the hostility by which M. Pauly was animated must be taken into consideration, as, if the results were in all cases those which he has stated, the motives which induced him to publish them at a subsequent period cannot fail to be duly appreciated.

In one of the female patients, whose case I noted, phlebitis supervened on bleeding from the arm, and was treated by the repeated application of leeches, between the point where the inflammation terminated and the heart. M. Lisfranc stated, that since he had adopted this practice, he had not lost a patient from this disease, whereas formerly, when in the habit of employing other means, and of applying leeches near the wound, or over the inflamed vein, the majority of cases terminated unfavourably. In chronic abscess, as also in psoas abscess, as soon as fluctuation is perceptible, M. Lisfranc makes an aperture an inch in length, and presses out as much matter as possible, applying subsequently, poultices to the wound, and leeches along the tract of the abscess, which are repeated as often as appear necessary. The matter is pressed out at each dressing, and when there is no fever or inflammatory symptoms, the patient is allowed a nourishing diet.

In cases of painful menstruation, M. Lisfranc speaks highly of the effects of revulsive bleedings from the arm, in the interval between the periods combined with other sedative measures. In cases of polypus uteri requiring operation, he prefers excision to the ligature, the tumour being firmly seized with hooked forceps, *pinces de museaux*, is brought down by steady and gradual traction out of the vagina, and its neck divided. M. Lisfranc states, that hemorrhage to any extent is of rare occurrence after this operation, the unfavourable symptoms which sometimes supervene being mostly of a nervous character, and generally subsiding by the use of sedatives. In cases of fracture, M. Lisfranc employs the ordinary junk and splints, and does not make use of the starched bandages. In many cases of amputation he prefers the flap to the circular method, and dresses the stump in the usual way. He generally removes the greater part of the dressing within twenty four hours after the operation.

At page 45, we learn that, in the Hôpital Necker, M. Civiale treats paralysis of the bladder, and vesical catarrh in elderly persons, in the following very original manner:—

A stream of cold water is made to flow from a reservoir fixed near the ceiling through an elastic gum tube, having stop-cocks, which is fixed to a silver catheter divided into a double tube by a central partition; the catheter being introduced as the patient lies in the recumbent position, the water flows into the bladder by one side and out by the other. A continued stream is thus kept up for about ten minutes, and the process is repeated every second or third day; the quantity of water which passes into the bladder may be regulated by the stop-cock, so as to prevent undue distension. The beneficial effects of this method are attributable to the clearing away of the accumulated mucus, and to the tonic action of the water upon the bladder.

M. Sichel, a German oculist, has an Ophthalmic Hospital, of which Mr. Lee speaks highly.

M. Sichel is remarkable for the correctness of his diagnosis; indeed, I know no one in whose opinion I should be inclined to place more confidence in a complicated and difficult case of ocular disease. He likewise is anxious that pupils should exercise themselves in the diagnosis, by minute examination of the organ, and directs attention to the leading features in every case, as it passes before him. The general principles of his treatment are by antiphlogistic and constitutional measures; frequently employing leeches, and saline and other purgatives, as well as special remedies, as mercury, colchicum, &c., in the varieties of inflammation; and having recourse to blisters, stimulating lotions, &c., only in the mere chronic forms of disease. In strumous ophthalmia, where local congestion is so frequently combined with general weakness, M. Sichel frequently recommends the repeated application of three or four leeches, near the eyes, and at the same time tonic remedies, and regimen. By many English surgeons his divisions of the varieties of inflammation, as depending upon an arthritic rheumatic or other diathesis, would be considered as scarcely necessary in a practical point of view; the experience, however, of the leading German and several of the English oculists, has shown that these distinctions are highly important with reference to treatment; and during a pretty close attendance on M. Sichel, on the several occasions of my visits to Paris, I have had abundant opportunities of seeing the superior results of his practice in general, as compared with other public institutions. The practical distinctions made by M. Sichel in amaurotic affections, are likewise highly important: but as these are fully exposed in his work, I refrain from any farther allusion to them. M. Sichel has no exclusive method, in operating for cataract, and sometimes performs extraction on one eye, and depression on the other. He also occasionally operates by keratonyxis. In one case of transmutic capsular cataract, he extracted the opaque capsule through the sclerotic, making a puncture with Jægar's triangular knife, about three lines from the cornea, a little above the centre of the eye, and then introducing a pair of fine forceps, by which the adhesions were torn through, and though the part could not be wholly removed, it was drawn to the aperture, and a portion snipped off with scissors; the rest being subsequently drawn upwards, a round-shaped pupil was formed, and the patient regained vision. During the attempts to seize the membrane, which were once or twice unsuccessful, a good deal of the vitreous humour escaped; the further escape was, however, arrested by closing the eye, the attempt being repeated after a few minutes.

After giving us some cases illustrative of the practice of the different Parisian hospitals, the author takes us to the provincial hospitals. In reference to those, our quotations, if shorter, will scarcely be less interesting. The following is *his account of MM. Bonnet and Petrequin, of Lyons*:—

MM. Bonnet and Petrequin are the resident surgeons of the Hotel Dieu: the former makes his visits clad in the black doctor's gown and cap, as was the custom in by-gone times, considering that it has a more impressive effect upon the mind of the patient. This gentleman is well known by his investigation and elucidation of various points of surgery, on which he has published numerous memoirs in the journals. His last work treats of the section of muscles and tendons, in squinting, myopia; stammering; club-foot, and other contractions; and appears to me to be the best which has been published in France on this subject. He discriminates with justness those cases of stammering in which an operation may be performed with prospect of advantage, and those in which it should be avoided. In performing this operation, M. Bonnet first proposed and practised the subcutaneous section of the genio-glossi, a puncture being made with a narrow knife through the skin, about an inch behind the symphisis of the jaw-bone, and the attachment of the muscle to the bone divided on either side. In several cases of myopia, and disposition to fatigue of the eyes, he has divided with success the inferior oblique muscle; for the account of this method, and the reasons which led him to adopt this operation, I must refer to his work. M. Bonnet has in the press a treatise on diseases of the Joints, and a work on Diseases of the Urinary Organs.

M. Petrequin is likewise one of the most zealous cultivators of surgical science, among the younger members of the profession in France; and has distinguished himself by various talented publications. His brochures on the employment of nux vomica in paralysis, and on diseases of the eyes, contain much original matter, and may be read with interest. M. Petrequin has also published his remarks upon Italian medical institutions, made during a journey in that country.

Fractures of the thigh are treated in the Hôtel Dieu by an apparatus of Iron-wire, lined with padding, which encases both the inferior extremities and the pelvis, extending nearly to the armpits and but that it is open in front, (the anterior part of the limbs being protected with compresses, the lateral parts of the apparatus are approximated to each other by straps,) might be likened to a pair of trowsers. This keeps the pelvis more firmly fixed than other kinds of apparatus, and is especially advantageous in fractures of the upper part of the bone. Fractures of the leg

are placed in a case of iron-wire, padded, and apparatus of a like nature are employed in some diseases of the joints, where the object is to prevent motion of the part. But little medicine is given in surgical disease, and the mode of dressing is in general similar to that of the Parisian hospitals. Stone is not common at Lyons; when lithotomy is required, the lateral or the bilateral operation is preferred, though lithotomy is sometimes superseded by lithotrity. Hydrocele is treated by injection with solution of tincture of iodine. In gonorrhœal ophthalmia, a portion of the conjunctiva is sometimes excised, the part being subsequently touched with nitrate of silver, as proposed by M. Sanson; depleting measures and calomel being at the same time employed. In one case, in which eight days had elapsed since the commencement of the disease, the treatment was unsuccessful.

The author gives us a dreadful account of the treatment of the insane in the two hospitals at Marseilles, and confirms the recent statements as to the tendency to phthisis generated by the climate of the south of France. We have the following observations of Professors Lallemand and Serré, of Montpellier.

Professor Lallemand is well known as one of the most distinguished French surgeons, and as having enriched the science by improvements and elucidation on several points of practice. One of his latest works, "*Des Pertes Seminales Involontaires*," especially, attracted great attention at the time of its appearance. M. Lallemand considers the emissions to arise in most instances from a normal irritability of the vesiculæ seminales and vasa deferentia, depending upon an inflammatory condition of these parts, and of the urethra, which is not unfrequently evident at these urethral orifices upon post-mortem inspection. The principal remedy upon which he relies is cauterisation of the prostatic portion of the urethra; and the several cases which he has published appear to afford just grounds for the more general adoption of the practice; though, at the same time, it should be borne in mind that this affection frequently arises from constitutional debility, nervousness, or too excitable imagination, and vicious practices, in which the mere local treatment by caustic application would either do harm, or not be productive of good effect

M. Serré usually operates for cataract by depression; in three cases, which occurred shortly before my visit, he had performed keratonyxis with success; in ulceration of the cornea, with chronic inflammation, cauterisation with nitrate of silver is employed. Simple fractures of the lower limbs are treated by starched bandage, or a casing of the limb in plaster of Paris; in compound fracture, the many-tailed bandage, and lateral splints, are applied. After amputation, M. Serré unites the integuments by sutures, and adhesive plaster, employing but little charpiè, or additional dressing. He has published a work on the advantage of union by the first intention. As an illustration of the necessity of duly attending to the state of the vital powers, and to the influence of the mind in disease, and after operation, M. Serré mentions the case of a regimental fencing-master, whose arm was amputated in consequence of an accident. The operation was well performed, and everything appeared to promise success; when on the same evening, the patient, who had hitherto shown great firmness, fell into a state of complete mental dejection. Surprised at this change, M. Serré questioned the patient, and ascertained that he was oppressed at the thought of not being able for the future to provide for his family. He therefore represented the circumstance to the commander of the division to which the patient belonged, and brought him back the assurance that he would not be deprived of his place. "Immediately," says M. Serré, "his countenance brightened up, the pulse became firmer, the natural warmth of the skin was restored, his strength appeared to increase visibly, and he progressed without any further obstacle towards recovery. Thus, gentlemen," continued M. Serré, in his address to the students, "you see that the merit of the surgeon does not merely consist in knowing how to perform operations. Suppose this patient to have been under the care of a good operator, but inattentive in other respects, or not endowed with sensibility to feel for the peculiar position of this soldier, the consequence would be that he would have certainly died."

In the venereal wards, gonorrhœa is treated in the acute stage, by antiphlogisties and baths, and subsequently by cubebs, copaiba, or a mixture of the two; in the more chronic forms, injections are prescribed of a solution of nitrate of silver, (one quarter of a grain to the ounce of water), and in more obstinate cases by a mild mercurial course. In primary sores, a mild mercurial treatment (the oxymuriate) is prescribed. Calomel and frictions are used only in occasional cases. In the secondary and long-standing forms the muriate of gold is mostly used, in doses of 1-8th or 1-12th of a grain. M. Serré speaks highly of the results of this method, universally adopted in Montpelier.—The same remedy produces very good effects in scrofula, which is very common. Bubo is punctured, to allow the matter to escape, as soon as its existence is ascertained. Among the patients was a man, who had large warty excrescences at the margin of the anus, extending up the rectum, which had been supposed to be cancerous, having resisted various methods of treatment, but which subsided rapidly on the application of mercurial ointment to them, their size having materially diminished in eight days.

We shall here close our quotations for this week, promising ourselves and readers the pleasure of returning to Mr. Lee's book in another notice.

ON PHTHISIS.

To the Editor of the 'Medical Times.'

Sir,—In Nos. 194 and 195 of your periodical, there is contained a very interesting, and what to me appears a very able and invaluable article by Dr. Gardner, on the subject of Malaria.—In that paper Dr. Gardner makes apparent the probability that the active principle of malaria is sulphuretted hydrogen.

The following observations of M. Napple, of Lyons, and M. Pacaud of Bourg, are to be found in No. 205 of this journal, page 348.

M. Napple states, "that phthisis is seldom observed in marshy countries; that in places situated in the centre of the miasma, not a single case of phthisis is to be found, and that they augment in number, as the distance from the focus increases."—M. Pacaud observes, "that he never met with phthises in marshy situations, though he has been in practice upwards of 45 years, and that the hospital of Bourg, which receives a great number of patients affected with intermittent fever from those localities, never receives any afflicted with phthisical disorders."

In No. 196, p. 200, you published from me a letter, in which I ventured to propose a trial of what might be the effects of hydrosulphuret of ammonia as a remedial agent in phthisis; stating the principles on which I conceived it possible that beneficial results might be expected to accrue from its administration. Could those principles, in conjunction with the views advocated by Mr. Gardner, be considered adequate to explain the result of MM. Napple and Pacaud's observations? And might not these considerations be adduced as an additional argument to induce physicians to give a trial to the effects of hydrosulphuret of ammonia in phthisis.

Your obedient Servant,

HENRY FREKE.

Dublin,
14, Richmond Terrace, Portobello,
4th Sept. 1843.

Chemical Condition of the Perspiration.—The normal perspiration has constantly an acid re-action, but the free acid increases to an extraordinary degree in some diseases, as, for instance, in rheumatism and gout. In these diseases it is found, that the perspiration of the forehead, breast, and extremities intensely reddens litmus-paper in a rapid and extraordinary manner. According to Bereud, in putrid and typhus fever the perspiration should not only lose its acid, but ever have an ammoniacal smell; according to Anselmino, in the critical sweat of a parson labouring under rheumatic fever, albumen should be present. Voigtel has observed bloody sweat, which has been noticed by others, in putrid fever and typhus icterodes: the sweat of patients labouring under calculus, as also of gouty persons, contains uric acid and urate of soda, whereby, after the evaporation of the water, the body becomes covered over with a fine crystalline coating. The colouring matter of the bile has been sometimes found in the sweat of icteric patients, as also of those labouring under the febris putrida biliosa. The red colouring matter, which imparts its colour to the luteaitious sediment, has been found by Landerer in the sweat of the axillary glands of a fever patient. Blue sweat has been observed several times. In the colliquative sweats of hectic patients, fat also has been found. The odour of the perspiration is of particular importance. It is well known that many medical men, on entering the sick-chamber, nay, even the sick-house, can infer the disease from the particular scent. The smell of the sweat can be the subject of chemical enquiry in but few cases; one may, no doubt, infer the presence of acetic acid in perspiration emitting an acid odour; and that of ammonia in sweat with an ammoniacal odour; but in most other cases the chemical examination is unattended with success: in like manner, the physician who possesses quickness of sense for distinguishing various odours, and who has exercised this sense by several years' experience, can be assisted, through the sense of smell, with tolerable certainty. The sweat of rheumatic and gouty persons has an acid odour; the sweat of putrid fever patients, and of scorbutic patients, should have a putrid odour; that of syphilitic patients a sweetish one; that of itchy patients a mouldy smell; that of jaundiced patients a musk-like smell; that of scrophulous patients the smell of sour dough; and that of agueish petients the smell of fresh-baked brown bread.

Albuminous Urine.—Albuminous urine, when viewed under the microscope, exhibits granules and corpuscles of varying forms and size, the larger of which might be mistaken for the pus-globule by careless or inexperienced observers. The true source, however, of these bodies is, in all probability, the serum of the blood, which deposits analogous granules and corpuscles, when diluted by a liquor of light specific gravity, which may be easily proved by pouring distilled water on serum, and submitting to the microscope the precipitate which collects after a few hours have elapsed. In other respects, coagulable urine presents the ordinary appearances under the microscope; the solid ingredients or crystallizable products exhibiting, when present, their usual characteristics Some specimens shew very well the large form of granulated mucous globule, known as the secretion of the prostrate.

Lyssa.—M. Dupuy narrated to the Academy the case of a man bitten by a mad dog, on whom cauterization was practised, and who

escaped the disease. A discussion followed, when the general opinion seemed to be, that there is not any cure for this terrible malady, and that cauterization is the only safeguard. Many instances were mentioned in support of this view of the case.

Morbus Brightii.—The principal characters of the fluids in the morbus brightii are, the excessive quantity of water in the blood, the presence of one of the ingredients of the urine in the blood, milk, and fluids effused in the various serous cavities, the absence or deficiency in the urine of one, or more, of its natural ingredients, the general watery condition of the urine, and the presence of albumen in it.

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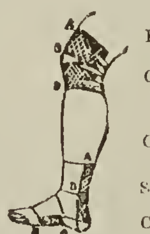

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A Journal of English and Foreign Medicine and Medical Affairs

No. 210. Vol. VIII. LONDON, SATURDAY, SEPT. 30, 1843 PRICE FOURPENCE, Stamped Edition 5d.

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ON THE PHYSIOLOGY OF HEALTH AND DISEASE,

AS APPLIED TO VEGETABLES AND ANIMALS, BUT MORE ESPECIALLY TO MAN.

By M. RASPAIL.

LECTURE XIV.

Corollary and applications of the foregoing principles.—1°. Our organs being the organized product of the combination of water, air, earth and heat, and development being but the reproduction of the organ, upon its own type, and at the expense of some one of the globules of the elementary vesicle, every organ is, so to speak, formed to the climate in which it has been generated; its elementary vesicles are arranged, in the order best adapted to absorption of the heat, of the air and of the liquids, which furnish the materials of its indefinite reproduction. But if it suddenly change its climate and habits, the being becomes ill; it suffers, even in the midst of abundance; inasmuch as it was organized to receive the aliments of life, under other conditions and dimensions than those to which it is now subjected. If it pass abruptly, from one end of the scale to the other, it dies as if asphyxiated; it can only proceed with impunity from the one extreme to the other, by passing in a gradual manner, and thus becoming inured to the change. How many diseases, how many sudden deaths, should we not have, if the winter with its frosts were suddenly to supervene on the heats of summer; or *vice versa!* If the inhabitant of the north could be instantaneously transported beneath the burning sun of the torrid zone! But the succession of climates and of seasons becomes harmless, because it is accomplished by the graduation of the zodiac, or by that of the slowness of the voyage. We arrive from one extreme to the other by insensible transitions, by infinitesimal fractions. Every vessel, whether inert or organic, cracks on the sudden passage from one extreme of temperature to the other. Caloric forces a passage where none previously existed; witness the lightning which destroys and overturns every obstacle that presents itself to its free distribution; allow it time to distribute itself, in isolating spheres, around each atom, and the atoms augmenting their respective distances,—absorption and aspiration, exhalation and expiration being performed by orifices or channels of a larger diameter, the caloric will impregnate, with fecundity and life, the tissue which it previously had pulverized.

2°. Now, in summer, it sometimes happens that the temperature may fall to that of winter, in a sudden and instantaneous manner. When, on a hot day, in which the thermometer stands at from 24 to 30°. (cent.) we plunge the hands into a pail of water drawn from a well of about thirty *metres* (90 feet) in depth, we pass abruptly from the temperature of summer to that of winter; for the temperature of well-water being about 10°. we find that on dipping our hands into it, we suddenly lower the temperature of our body, by 14 or 20°. (cent.) How much must such a condition favour an acute attack of pneumonia, especially in an individual of delicate constitution; and this not only by the disorganization of the tissues or the coagulation of the liquids, but also by the contraction of the membranes, the consecutive constriction of the vessels, and the consequent accumulation of blood towards the internal and superior regions. Such was the case with Alexander who, when exhausted with heat, suddenly precipitated himself into the icy waters of the Granicus, whence he was withdrawn in a dying state. This condition may also be compared with that of the glass which cracks and breaks, if we withdraw it from the fire and plunge it into cold-water; or, on the other hand, if we expose it to the flame suddenly, on removing it from even the most elevated temperature of the atmosphere. Caloric strikes like lightning, if it has not time to distribute itself around the atoms, according to the laws of equilibrium.

3°. The animal, in a state of nature, takes its food and its drink at the ordinary temperature; civilized man endeavours to counterbalance the evils of civilization by its advantages, he repairs on one side what he has damaged on the other; he maintains, by means of art, a stomachic elaboration which swerves from nature; he stimulates a slothful or inactive digestion, by means of hot dishes and inflammatory liquors; he moderates a heated digestion, by means of drinks made cold with ice, which he collects in winter and which he preserves in the depths of the earth. But the use of iced drinks in summer is not equally harmless at all ages and in all temperaments; and the abuse of ice is frequently quite as pernicious as that of alcoholic liquors.

4°. On what principle can that man act, who keeps ice applied, for weeks together, upon the head of a poor child, reduced by low diet and blood-letting, and that for fear of a little fever? He is not sure that he will overcome the malady; but, as it is certain that cold disorganizes the tissues, if the poor patient recover from the fever, let the medical man tremble for the mental faculties of the child; for the space which separates the brain from the icy atmosphere which is maintained around the head, consists merely of the thickness of the cranium, which moreover is an excellent conductor of caloric.

5°. Moisture being a great absorbent of caloric, and this in an uninterrupted and indefinite manner, every humid atmosphere exposes our organs to an abrupt and instantaneous chill. Woe to the individual, if, when surrounded by such a medium, the temperature of the atmosphere become suddenly depressed, more especially if such depression occur during his sleep.

6°. When the animal remains exposed to a temperature, which becomes gradually lowered, and with a slowness which corresponds to the tardiness of development, the modification induced in the elaboration, by this progressive change of influence, imprints, on its products, chemical characters which communicate, to the tissues of the dermis, the property of protecting the organs which it covers, by depriving it of the conductibility of caloric, which previously distinguished it; and the organized substance becomes elaborated into a fatty and oleaginous tissue. We see, in fact, the animal fatten in winter and grow thin in summer: its fur or its feathers grow thicker in winter; and, on the first approach of spring, the animal moults: the feathers and the hair are highly oleaginous vegetations. The plant which grows on the summit of our mountains, or which vegetates in a latitude of near 60°., rises but a little height, but is covered, both on its leaves and stems, with a protective coat of hair. Nature, that grand circle of harmonies and of compensations, never fails to imprint, even on its deviations, an influence which leads to their rectification. Daily observation, moreover, shows the power of a low state of temperature over the formation of fat, as in the fattening of animals. Autumn is the season to commence the fattening of the pig. The ortolan, which is so lean when caught in the field, becomes little more than a lump of fat, after being caged for a short time in a dark and cool chamber, and being supplied with seed and water, but especially being freely shaded with the branches of trees. The Dutch fatten their oxen by keeping them motionless in the stable, without ever exposing them to the rays of the sun. The capon acquires those qualities which make it so valued by the connoisseur, from the simple circumstance that it is effectually protected from all amorous desires by castration, as well as sheltered from the light of day or the indirect rays of the sun. Sportsmen can predict, according to the changes of temperature, the day and the hour in which the game will be found more or less plump; and if a fog arise in the night, the thrush, which was detestable the day before, becomes excellent when caught on the following day. Fat is one of those products which I have called nocturnal, like starch in vegetables. The influence of temperature is not equal in all individuals; the one will be able to undergo with impunity an atmospheric variation, which would be fatal to another.

7°. When the subtraction of caloric takes place merely from a circumscribed surface of the body, and its action is applied only to the subjacent layer of muscles, the morbid effects are confined to this region; the muscular antagonism is more or less compromised in this zone, and a rheumatic pain is experienced, in consequence of the exposure to cold; symptoms of this kind are induced, by seating ourselves on a stone bench at certain seasons of the year. The older a person is, the weaker does he become, and the more liable is he to suffer from such a circumstance, the woman more than the man, a person fasting more than one who has just had a meal, and the mother of several children rather than a woman who has never had any offspring. For, those individuals whose organs elaborate with least activity, disengage less caloric, and therefore suffer more than others, in consequence of the application of cold.

8°. A rapid current of air may produce, in the animal economy, effects equally disastrous as the most powerful and instantaneous depression of the atmospheric temperature; for our body is so permeable to the air, that there is not one of its vesicles which can be considered as placed beyond its reach; the human body is a porous structure, it is like a sieve, especially to the air. The effects of these currents of air, under certain circumstances, are so prompt, that, when the hurricane blows in the South of France, the traveller, pierced in every part, feels himself, so to speak, contract in size, each moment; it appears as though this fearful blast would penetrate to the very marrow of his bones; he is literally withered up; man, animals and vegetables, all droop and perish beneath its fatal influence. The views which we expressed in a former lecture, as to the influence of currents of air in the production of asphyxia, will serve to explain, with equal facility, the mechanism of the kind of chill of which we have just been speaking. In fact, suppose a man standing upright, in the midst of a current of air of this nature, and with his back turned towards the north whence the wind blows; the column of air which strikes his back, will necessarily have much more force than that column of air, which is applied against the anterior part of the body, and which previously tended towards the state of equilibrium; the column of air coming from the north will, then, penetrate the surface of the body, with an energy equal to its excess of force over the anterior column. Nor is this all: for, the effect of this current of air passing with such inconceivable rapidity, is to place the anterior part of the body in a kind of vacuum, by reason of the obstacle which the back offers to the current, which, being forced to divide itself into two lateral currents, must necessarily draw along the whole quantity of air which existed in their interstice; in the same way as we see a stream of water, split into two by some stake driven into the bed of the river, re-unite its branches only at a certain distance beyond the obstructing post. This vacuum, then, upon the anterior part of the body, totally destroying the power of equilibration, will permit the current of air which strikes the back, to traverse the body through, just as if we were to apply a pneumatic machine upon the belly. Now, should such a permeability be established, the liquids will become evaporated, the cells will be drained of their juices and will shrink up, the circulation will be interrupted, the tissues will become shrivelled, and the individual will be, as it were, ossified or dried up under our very eyes.

That which we have been describing on a large scale is found to take place, in minor proportions, in every species of current of air. The same mechanism is displayed in its action; the same results ensue from its operation; the intensity or proportions alone vary. But it is not, at the moment of reaction, that the symptoms are revealed, or its consequences rendered appreciable It is not, in fact, while the functions are carried on with regularity, that we are warned, by the suffering, of the danger which impends; it is only when its immediate influence has ceased, that its consequences begin to be felt. The cell, in fact, becomes exhausted as soon as the stimulus and alimentation, which it received from the current of air which traversed its tissues, have died away; the capillaries become obstructed, from the approximation and adhesion of their walls; the circulation is intercepted; the various organs are no longer in a state of antagonism; some appear to be totally exhausted of their contents, while others

are in a state of plethoric distension; the harmony of the system is destroyed. A morbid predisposition is engendered in every part, the disease, which is every where in germ, changing its name, according to the organ which it attacks; at the same time that the weaker and more delicate organs, if they remain exposed to the same influences as the stronger, are always the first victims. Hence, coryza and bronchitis, if the mouth and olfactory organ are alone exposed to the current of air; otitis, if it be the ear; gastritis and enteritis, if the abdominal region; lastly, rheumatic pains, if some particular muscle only has undergone this influence; and thus with other organs and other regions.

9°. In the physiological estimation of the phenomena of heat, we must never lose sight of this general principle, that caloric is a substance, while cold is but a negation, a mere ideality. The coldest body, in ordinary language, is, according to our theory, but a body whose atoms are enveloped with isolating layers of caloric of a less volume than are the atoms of that body which to us seems hot. The latter would become cold to our touch, if the heat of our body were raised to a higher pitch. Cold and heat are but proportions of quantity of the same substance, or universal fluid, distributed unequally throughout the different bodies of this world. The ice of the poles has a latent and specific heat, like bodies which have been placed for some time in the temperature of our atmosphere; and the more the atmospheric cold augments, the more of this latent heat does the ice lose; so that the ice of the poles possesses less caloric than the ice of our climates. Two bodies, the one cold, and the other hot, both possess a layer of caloric around their atoms; they differ, one from another, only inasmuch as this layer of caloric which envelopes, with its atmosphere, each atom, is less voluminous in the first than in the second. As soon as we place them in contact, an exchange takes place, or rather a subtraction, to the gain of the atoms of the cold body, and at the expense of the hot body: this movement of caloric ceases, when the equilibrium is restored, that is to say when the atoms of the two bodies are enveloped with a layer of caloric of an equal volume; and this state of repose continues until their temperature receives some addition, by the approach of a hotter body, or some subtraction, by contact with a colder one. Inequality is the source of all these movements, as equality is the condition towards which all beings tend.

Final Conclusions of the Foregoing Principles.—1°. Nutrition, and development which is its consequence, requires the constant and regular concurrence of respiration, of digestion and of temperature. The privation of one or other of these three materials of the elaboration is an immediate cause of death; the least variation, in the proportions, is a cause of morbid predisposition, variable in its intensity.

2°. The most vital respirable air, is atmospheric air, free from every emanation foreign to its constitution.

3°. The most digestive food is that which combines, in the proportions required by the individual organization of the stomach, the two elements indispensable to the alcoholic and acetic fermentations, besides condiments capable of protecting the digestion.

4°. The most suitable temperature is the habitual one, between the limits of 10°. and 24°. (cent.) Every sudden variation, whether higher or lower, is a cause of disease. If the temperature falls, the air becomes condensed; it is rarefied, if the temperature rises: in either case, the respiration no longer receives its food or support in the accustomed quantity; all the other organs, as well as that of respiration, experience a revolution which necessarily becomes a cause of derangement to their functions. The amount of this disturbance is symptomatic of the intensity of the danger, which thus compromises the health or threatens the life.

5°. The action of the gradual lowering of the temperature is a narcotic, which, gradually depressing the circulation, stupifies the system ather than disturbs it, and induces death through the medium of sleep. Aquatic animals, at least those at the bottom of the scale, can support this species of stupor for a long time, without losing the faculty of returning to life, as soon as the ice, in which they are enveloped, dissolves, beneath the influence of a warmer temperature. Reversing this influence, we see the *rotifera* and the *vibriona* which infest our corn, support the most perfect desiccation under a summer sun, without thereby losing the power of regaining life, on the addition of the least drop of water. We know not how long this double sleep by narcotism and by privation is capable of lasting, without passing into the state of positive death.

6°. Uniformity of influences ensures regularity of the organic functions, and this the duration of the individual; if we were unchangeable we should be eternal.

Physical causes of disease, which act by decomposition of the liquids, or by disorganization of the tissues. — (*Disorganizing causes.*)—If we pour a drop of alcohol, or of sulphuric acid, into the serum of the blood, or into an aqueous and limpid solution of the white of egg, we shall quickly see a white and curdled precipitate thrown down; an evident sign of the decomposition of these liquids. Touch the skin with a moistened stick of nitrate of silver, and you will shortly find the spot assume a bluish or violet colour; immerse a piece of flesh in a solution of caustic potash, or in some concentrated sulphuric acid, and you will see this flesh become shrunken, and dissolve in the liquids like a crystal of salt in water. The tissue becomes *disorganized,* in the one case, because a more active base subtracts from it its carbonic acid, the elements of which concurred to constitute the organic molecule; in the other case, because the sulphuric acid withdraws from it the earthy base, which was associated with the organic molecule, into an organized tissue.

Our individuality is encompassed, at one instant or another of our existence, by similar causes of disorganisation, which, without acting upon so large scale, and consequently with such frightful effects, arrive with equal certainty at the consummation of their work of death, by a slow and gradual action, which is frequently so much the more dangerous and inevitable, as it is more invisible. These causes produce only local diseases, when they are confined to the surface, or when, attacking some organ placed at a greater depth, they intercept its communication with the general circulation; and, in this case, the organ itself may be greatly compromised, without the general life suffering any greater disturbance, than the fever, which arises from the derangement of the equilibrium, in the organic functions. But woe to the individual, if a particle of that poison, which is acting upon this organ, pass immediately into the general circulation, however insignificant the evil may appear. A drop of nitric acid which you could place with impunity upon the skin, would strike an animal dead if introduced into a vein of sufficient calibre to allow of its passage. Whence we must conclude that it is the decomposition, and not the disorganization, which endangers life, and that, consequently, no poison can act but through the vehicle of the circulation. The disorganization which is effected upon an organized surface, produces an eschar which falls off, and there the thing ceases; for an agent when absorbed becomes neutralized, and so its ulterior action is annulled. This fact being borne in mind, in the course of what we have to say on this subject, we shall divide the disorganizing causes into three kinds, or groups, as follows: 1°. The disorganizing causes which act through the vehicle of the respiration—2°. Those which act by that of the digestion—3°. Those which act by our external or cutaneous surfaces, and, so to speak, by absorption and imbibition.

First kind.—*Disorganizing causes which act through the vehicle of the respiration.*—To obtain an exact idea of the effects of a deleterious substance, which is introduced into an organized body, by the vehicle of the aspiration, we have merely to experiment upon a tube of *chara,* (prepared in the manner pointed out in my *Systeme de Physiologie vegetale,*) which will serve us as a species of toxicometer. We shall see with what rapidity the smallest drop of any intoxicating substance penetrates through the sides of the tube, without disorganizing it, and paralyses the circulation of the liquid, with the quickness of a flash of lightning. Whence we must conclude that intoxication, by the vehicle of the respiration, acts upon the liquid of the circulation, rather than upon the tissues which protect it, and produces, even in the smallest quantity, the most speedy and extended effects.

Atmospheric air, from its quality of fluidity, possesses, like liquids, a faculty of solution which increases with the temperature. Vapours or gaseous bodies are capable of such intimate combination with it, that we have but few re-agents which can separate them. The action of cold precipitates the vapours, under the form of fogs or clouds, rain, snow, or hail of various degrees of size and compactness, according to the rapidity with which the temperature falls. But the permanent gases are precipitated with less facility, or else under forms that are less visible to our eyes; they occupy only the highest or the lowest strata, according to the specific gravity of each. Among the gases or vapours which impregnate the air, there are some which are merely injurious to respiration by their presence, simply because they are different to the atmosphere; while others are decidedly deleterious in themselves. The first are *asphyxiating,* the second *intoxicating.* The former are injurious or destroy simply by depriving the respiratory organ of the quantity of air which is required for its elaboration. The others, on the contrary, combine with this primitive faculty a destructive power; they do not simply asphyxiate, they disorganize; they do not merely deprive the organ of its vital food, they destroy it by effecting its decomposition.

The *asphyxiating gases* act, upon the animal or vegetable economy, by weakening its powers, that is to say by a species of gradual extinction. The stalk of the plant becomes bent and droops upon the earth; the leaves, which were kept in a horizontal position by their incessant aspiration, become flabby, and fall off; the entire plant languishes and dies. The animal becomes oppressed with sleep; it appears as in a state of syncope, a state in which the whole powers of the nervous system are blunted and repressed. Where the mind has been previously agitated and distressed, these first moments of asphyxia may even be attended with a certain pleasurable sensation, an oblivion of all our miseries and woes. In attempting to verify this experiment upon the living subject, we should bear in mind the difference which exists, between a reflected physical experiment and an involuntary accident. The chemist who endeavours to note, point by point, his feelings while respiring some asphyxiating gas, with his mouth applied to a glass bottle, is not placed in the same conditions either with respect to mind or body, as the unfortunate being who becomes naturally asphyxiated through the medium of all the respiratory surfaces. The chemist preserves a fixed idea which puts him on his guard, and enables him to avoid the danger; besides that, in his experiment, he invariably respires a small quantity of atmospheric air, which gains admittance through the nostrils, as well as through the least opening made during the movements of the lips, and which thus enables him to judge, by contrast, of the feelings of his own position. In like manner, the experiment performed in the vacuum of the air-pump, cannot be said to represent that which passes, in asphyxia by privation of respirable air. When, in fact, we place a small animal (a mouse, or a bird) beneath the glass of the air-pump, and commence to form a vacuum, we shall find the animal, on the first stroke of the piston, become convulsively agitated; for in this case, the subtraction of air is abrupt and instantaneous; it gives a violent shock to the whole system, throwing all the organs into a state of commotion. The results are quite different, however, if we disoxygenate the air in a slow and gradual manner. We shall then see the animal sink down and become exhausted, by a slow and insensible gradation.

We have here described the effects of asphyxia by nitrogen, hydrogen, caloric, the deutoxide of nitrogen, and the oxide of carbon, &c. which are asphyxiating though not intoxicating gases.

UNIVERSITY OF LONDON.

Abstract of Regulations for the Degree of Bachelor of Medicine.

Candidates are required to have been engaged during four years in their professional studies at one or more of the Institutions or Schools recognised by the University; to have spent one year at least, of the four, in one or more of the recognised Institutions or Schools in the United Kingdom; to pass two examinations.

For the First Examination, which takes place once a year, and commences on the first Monday in July, the Candidate is required to produce certificates,—

Of having completed his nineteenth year.

Of having taken a Degree in Arts in the University, or in a University the degrees granted by which are recognised by the Senate of the University; or of having passed the Matriculation Examination.

Of having been a Student during two years at one or more of the Medical Institutions or Schools recognised by the University, subsequently to having taken a Degree in Arts, or passed the examination.

Of having attended a course of lectures on each of four of the subjects in the following list:—Descriptive and Surgical Anatomy; General Anatomy and Physiology; Comparative Anatomy; Pathological Anatomy; Chemistry; Botany; Materia Medica and Pharmacy; General Pathology; General Therapeutics; Forensic Medicine; Hygiene; Midwifery and Diseases peculiar to Women and Infants; Surgery; Medicine.

Of having dissected during nine months.

Of having attended a course of Practical Chemistry.

Of having attended to Practical Pharmacy during a sufficient length of time to enable him to acquire a practical knowledge in the preparation of medicines.

The fee for the Examination is five pounds.

Candidates to be examined in the following subjects:—Anatomy; Physiology; Chemistry; Structural and Physiological Botany; Materia Medica and Pharmacy. Anatomy and Physiology, by *viva voce*, and Demonstrations from Preparations. Chemistry, Materia Medica, and Pharmacy, by *viva voce*, from Demonstrations and Specimens.

The Second Examination takes place once a year, and commences on the third Monday in July.

No Candidate is admitted to this Examination within two academical years of the time of his passing the first Examination, nor unless he produces certificates,—

Of having passed the first Examination.

Of having, subsequently to having passed the first Examination, attended a course of lectures on each of two of the subjects comprehended in the list, and for which the Candidate had not presented certificates at the first examination.

Of having, subsequently to having passed the first Examination, dissected during six months.

Of having conducted at least six labours.

Of having attended the medical practice of a recognised hospital, or hospitals, during twelve months, and lectures on Clinical Surgery.

Of having attended the surgical practice of a recognised hospital, or hospitals, during other twelve months, and lectures on Clinical Medicine.

Of having, subsequently to the completion of his attendance on surgical and medical hospital practice, attended to practical medicine in a recognised hospital, infirmary, or dispensary during six months.

The fee for this Examination is five pounds.

Candidates to be examined in the following subjects:—Physiology, General Pathology, General Therapeutics, Hygiene, Surgery, Medicine, Midwifery, Forensic Medicine.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Regulations regarding Certificates and Testimonials.

Every Candidate for a Diploma in Medicine, upon presenting himself for examination, shall produce satisfactory evidence,—

1. Of unimpeached moral character
2. Of having completed the twenty-sixth year of his age; and
3. Of having devoted himself for five years, at least, to the study of medicine.

The course of study thus ordered by the College, comprises:—

Anatomy and Physiology; the Theory and Practice of Physic; Forensic Medicine; Materia Medica and Botany; and the principles of Midwifery and Surgery.

With regard to practical medicine, the College considers it essential that each Candidate shall have diligently attended, for three entire years, the physician's practice of some general hospital in Great Britain or Ireland, containing at least one hundred beds, and having a regular establishment of physicians as well as surgeons.

Candidates who have been educated abroad will be required to shew that, in addition to the full course of study already specified, they have diligently attended the physician's practice in some general hospital in this country for at least twelve months.

Candidates who have already been engaged in practice, and have attained the age of forty years, but have not passed through the complete course of study above described, may be admitted to examination upon presenting to the Censors' Board such testimonials of character, general and professional, as shall be satisfactory to the college.

The first examination is in Anatomy and Physiology, and is understood to comprise a knowledge of such propositions in any of the physical sciences as have reference to the structure and functions of the human body.

The second examination includes all that relates to the causes and symptoms of diseases, and whatever portions of the collateral sciences may appear to belong to these subjects.

The third examination relates to the treatment of diseases, including a scientific knowledge of all the means used for that purpose.

The three examinations are held at separate meetings of the Censors' Board. The *viva voce* part of each is carried on in Latin, except when the Board deems it expedient to put questions in English, and permits answers to be returned in the same language.

The College is desirous that all those who receive its diploma, should have had such a previous education as would imply a competent knowledge of Greek, but it does not consider this indispensable if the other qualifications of the candidate prove satisfactory; it cannot, however, on any account dispense with a familiar knowledge of the Latin language, as constituting an essential part of a liberal education; at the commencement, therefore of each oral examination, the Candidate is called on to translate *viva voce* into Latin, a passage from Hippocrates, Galen, or Aretæus; or, if he declines this, he is at any rate, expected to construe into English a portion of the works of Celsus, or Sydenham, or some other Latin medical author.

In connexion with the oral examination, the Candidate is required, on three separate days, to give written answers in English to questions on the different subjects enumerated above, and to translate in writing, passages from Greek or Latin books relating to medicine.

ROYAL COLLEGE OF SURGEONS IN LONDON.

Regulations of the Council respecting the Professional Education of Candidates for the Diploma, August 15th, 1843.

I. Candidates will be required, in addition to a Certificate of being not less than twenty-one years of age, to bring proof

1. Of having been engaged in the acquirement of professional knowledge for not less than four years; during which period they must have studied Practical Pharmacy for six months, and have attended one year on the Practice of Physic, and three years on the practice of Surgery, at a recognized Hospital or Hospitals in the United Kingdom;*—three months being allowed for a vacation in each year.
2. Of having studied Anatomy and Physiology, by attendance on Lectures and Demonstrations, and by Dissections, during three Winter Sessions, of not less than six months each.
3. Of having attended at least two Courses of Lectures on the Principles and Practice of Surgery, delivered in two distinct periods or seasons, and one Course, on each of the following subjects, viz., the Practice of Physic—Chemistry—Materia Medica—and Midwifery with Practical Instruction.

II. Members and Licentiates in Surgery of any legally constituted College of Surgeons in the United Kingdom, and Graduates in Surgery of any University requiring residence to obtain Degrees, will be admitted for examination on producing their Diploma, License, or Degree, together with proofs of being twenty-one years of age, and of having been occupied at least four years in the acquirement of professional knowledge.

III. Graduates in Medicine of any legally constituted College or University requiring residence to obtain Degrees, will be admitted for examination on adducing, together with their Diploma or Degree, proof of having completed the anatomical and surgical Education required by the foregoing Regulations, either at the School of the University where they shall have graduated, or at a recognized School or Schools in the United Kingdom.

IV. Certificates will not be recognized from any Hospital unless the Surgeons thereto be members of one of the legally constituted Colleges of Surgeons in the United Kingdom; nor from any School of Anatomy, Physiology or Midwifery, unless the respective Teachers be Members of some legally constituted College of Physicians or Surgeons in the United Kingdom; nor from any School of Surgery, unless the respective Teachers be members of some legally constituted College of Surgeons in the United Kingdom.

V. Certificates will not be received on more than one branch of science from one and the same Lecturer; but Anatomy and Physiology—Demonstrations and Dissections—will be respectively considered as one branch of Science.

VI. Certificates will not be received from Candidates for the Diploma who have studied in London, unless they shall have registered their Tickets at the College, as required by the Regulations, during the last days of January, April, and October, in each year; nor from Candidates who have studied elsewhere, unless their names regularly appear in the Registers transmitted from their respective Schools.

N.B. In the Certificates of attendance on Hospital Practice and on Lectures, it is required that the dates of commencement and termination be clearly expressed; *and no interlineation, erasure, or alteration will be allowed.*

Blank forms of the required Certificates may be obtained on application to the Secretary, to whom they must be delivered, properly filled up, ten days before the Candidate can be admitted to Examination; and all such Certificates are retained at the College.

By order of the Council,
EDMUND BELFOUR, *Sec.*

REGULATIONS TO BE OBSERVED BY STUDENTS

INTENDING TO QUALIFY THEMSELVES TO PRACTISE AS APOTHECARIES IN ENGLAND AND WALES, 1843.

Every Candidate for a Certificate of Qualification to practise as an Apothecary, will be required to produce Testimonials.

1. Of having served an Apprenticeship of not less than five years to an Apothecary.

No gentleman practising as an Apothecary in

* By a Resolution of the Council on the 7th of November, 1839, no Provincial Hospital will in future be recognised by this College, which contains fewer than 100 Patients, and no Metropolitan Hospital which contains fewer than 150 Patients.

England or Wales can give his apprentice a legal title to examination, unless he is himself legally qualified to practise as an Apothecary, either by having been in practice prior to, or on the 1st, of August 1815, or by having received a certificate of qualification from the Court of Examiners. An apprenticeship for not less than five years to Surgeons practising as *Apothecaries* in Ireland and Scotland, gives to the apprentice a title to be admitted to examination.

2. Of having attained the full age of 21 years :

As evidence of Age, a copy of the baptismal register will be required in every case where it can possibly be procured.

3. Of good moral conduct :

A testimonial of moral character from the gentleman to whom the Candidate has been an apprentice. will always be more satisfactory than from any other person.

4. And of having pursued a Course of Medical Study in conformity with the regulations of the Court.

Course of Study.

Every Candidate whose attendance on Lectures commenced on and after the 1st of October, 1835, must have attended the following Lectures and Medical Practice during not less than three winter and two summer sessions; each winter session to consist of not less than six months, and to commence not sooner than the 1st nor later than the 15th October; and each summer session to extend from the 1st of May to the 31st of July.

First Winter Session.—Chemistry, Anatomy and Physiology, Anatomical Demonstrations, Materia Medica and Therapeutics; this course may be divided into two parts of fifty Lectures each, one of which may be attended in the Summer.

First Summer Session.—Botany and Vegetable Physiology; either before or after the first winter Session.

Second Winter Session.—Anatomy and Physiology. Anatomical Demonstrations. Dissections. Principles and Practice of Medicine.

Second Summer Session.—Forensic Medicine.

Third Winter Session.—Dissections. Principles and Practice of Medicine.

Midwifery, and the Diseases of Women and Children, two courses, in separate sessions, and subsequent to the termination of the first winter session.

Practical Midwifery, at any time after the conclusion of the first course of Midwifery Lectures.

Medical Practice during the full term of eighteen months, from or after the commencement of the second winter session; twelve months at a recognised hospital, and six months at a recognised hospital, or a recognised dispensary; in connection with the hospital attendance, a course of *clinical lectures*, and instruction in *morbid anatomy*, will be required.

The sessional course of instruction in each subject of study, is to consist of not less than the following number of lectures.

One hundred on chemistry. One hundred on Materia Medica and Therapeutics. One hundred on the principles and practice of medicine. Sixty on Midwifery, and the Diseases of Women and Children. Fifty on Botany and Vegetable Physiology.

Every *examination* of an hours duration, will be deemed equivalent to a lecture. *

The lectures required in each course must be given on separate days.

The lectures on Anatomy and Physiology and the Anatomical Demonstrations, must be in conformity with the regulations of the Royal College of Surgeons of London in every respect.

Candidates must also bring testimonials of instruction in Practical Chemistry, and of having dissected the human body once at least.

The above course of study may be extended over a longer period than three winter and two summer sessions, provided the lectures and medical practice are attended in the prescribed order, and in the required sessions.

Those gentlemen whose attendance on lectures commenced before the the 1st of October 1835, will be allowed to complete their studies in conformity with the previous Regulations of the Court.

Recognition of Lecturers and Schools.

No Member of the Court of Examiners will be recognised as a lecturer on any branch of medical science.

The Court will not recognise any lecturer unless he lectures in connection with a recognised medical school: nor will they recognise a lecturer on more than *two* branches of medical science, nor will they recognise a lecturer until he has produced very satisfactory testimonials of his attainments in the science he purposes to teach, and of his ability as a teacher thereof, from at least two persons of acknowledged talents and distinguished acquirements in the particular branch of science in question; nor will they recognise a lecturer until he has given a public course of lectures on the subject he purposes to teach; but if, after such preliminary course the lecturer shall be recognised, certificates of attendance on that course will be received.

Satisfactory assurance must also be given that the teacher is in possession of the means requisite for the full illustration of his lectures. viz. that he has, if lecturing—

On Chemistry, a laboratory and competent apparatus;

On Materia Medica, a museum sufficiently extensive;

On Botany, a hortus siccus, plates or drawings, and recent plants:

On Midwifery, a museum, and such appointment in a public institution as may afford the means of practical instruction to the pupils.

The lecturer on the principles and practice of Medicine, if he lectures in London, must be a member of the Royal College of Physicians of London, and if in a provincial town, either a Member of the Royal College of Surgeons of London, or a graduated Doctor of Medicine of a British University of four years' standing, unless prior to his graduation he had been for four years a licentiate of this court.

The lecturer on Materia Medica, and Therapeutics, must be a member of the Royal College of Physicians, or a graduated Doctor of Medicine of a British University of four years' standing, or he must have been a licentiate of this Court for the same period.

The lecturer on Midwifery must be a member of one of the legally constituted Colleges of Physicians or Surgeons in the United Kingdom, of four years' standing, or he must have been a licentiate of this Court for the same period.

The names of the lecturers recognized by the Court, may be known on application to the Secretary at the Hall of the Society.

The certificates of teachers recognised by the constituted medical authorities in Dublin Edinburgh, Glasgow, and Aberdeen, as also those of the medical professors in Foreign Universities, are received by tho Court.

Much inconvenience having arisen from the presentation of schedules signed by lecturers unknown to the Court, it is particulary requested that the Registrars of the medical schools will furnish a correct list of their recognised teachers to the Secretary of this Court at the commencement of every winter session.

No Hospital will be recognised by the Court unless,

1. It contains at least one hundred beds:

2 It be under the care of two or more physicians, members of the Royal College of Physicians of London, or graduated Doctors of Medicine of a British University.

3 The Physicians give a regular course of clinical lectures and instruction in morbid anatomy.

4 The apothecary be legally qualified, either by having been in practice prior to the 1st of August, 1815, or by having received a certificate from this Court.

No Dispensary will be recognised by the Court, unless it be situated in some town where where there is a recognised medical school, and be under the care of at least two physicians and an apothecary legally qualified.

No Medical Practice will be available, unless it be attended in conformity with the course of study prescribed for pupils.

Registration of Testimonials.

All testimonials must be given on a printed *schedule**, with which students will be supplied at the time of their first registration:

In London at this Hall.

In Edinburgh, at Messrs. Mac Lachlan and Stewart's, booksellers.

In Dublin, at Messrs. Hodges and Smith's booksellers.

In the provincial towns, from the gentlemen who keep the registers of the medical schools.

All students, in London, are required, *personally* to register the several classes for which they have taken tickets; and those only will be considered as complying with the regulations of the court, whose names and classes in the register correspond with their schedules.

Tickets of admission to lectures and medical practice must be registered in the months of October and May; but no ticket will be registered unless it be dated within *seven* days of the commencement of the course; and certificates of attendance, must be registered in the months of April and August. Due notice of the days and hours of such registrations will be given from time to time.

The Court also require students at the provincial medical schools to register their names in their own hand-writing, with the registrar of each respective school, within the first twenty one days of October, and first fourteen days of May; and to register their certificates of having duly attended lectures or medical practice within fourteen days of the completion of such attendance.

The registrars are requested to furnish the Court of Examiners with a copy of each registration *immediately* after its close, as those students only will be admitted into examination whose registrations have been *duly* communicated to the Court.

Names of Gentlemen having the care of the Registrars.

Bath.—R. T. Gore, Esq. Lecturer on Anatomy.

Birmingham.—W. Sands Cox, Esq. Lecturer on Anatomy.

Bristol.—Dr. Wallis, Henry Clark, Esq. Lecturers on Anatomy.

Hull.—Edward Wallis, Esq. Lecturer on Anatomy.

Leeds.—Thomas Nunneley, Esq. Lecturer on Anatomy.

Liverpool.—Dr. Malins, Lecturer on Medical Jurisprudence.

Manchester.—Thomas Turner, Esq.; Thomas Fawdington, Esq. Lecturers on Anatomy.

Newcastle.—William Dawson, Esq. Lecturer on Midwifery.

Sheffield.—W. Jackson, Esq. Lecturer on Anatomy.

York.—John Hopps, Esq. Lecturer on Anatomy

Preliminary Examination.

Students may undergo their Latin examination at any time after their first registration, except during the months of August and September. A book is opened at the Beadle's office at the Hall, for the signatures of those gentlemen who are desirous of undergoing this examination, to which twenty will be admitted on each successive Saturday; but unless twenty names are entered on the list no examination will take place. Candidates are required to attend at half past three o'clock, and those who fail to pass this examination satisfactorily, will not be admitted until they appear for their general examination.

Examination.

Every person intending to offer himself for examination must give notice in writing to the Clerk of the Society on or before the Monday previously to the day of Examination, and must at the same time deposit all the required testimonials at the office of the Beadle, where attendance is given every day, except Sunday, from *Ten* to *Four* o'clock.

The examination of the candidate for a certifi-

* The Court particularly requests attention to this clause

* It is particularly requested that the lecturer himself will fill up the blanks in the schedule, specifying the mode of attendance.

cate of qualification to practice as an Apothecary' will be as follows:—

In translating portions of the first four books of Celsus de Medicinâ, and of the first twenty-three chapters of Gregory's Conspectus Medicinæ Theoreticæ.

In Physicians' Prescriptions, and the Pharmacopœia Londinensis,
In Chemistry.
In Materia Medica and Therapeutics.
In Botany.
In Anatomy and Physiology.
In the Principles and Practice of Medicine

This branch of the examination embraces an inquiry into the pregnant and puerperal states; and also into the diseases of children.

The examination of the candidate for a certificate of qualification to act as assistant to an apothecary, in compounding and dispensing medicines, will be as follows:—

In translating Physicians' Prescriptions, and the Pharmacopœia Londinensis.

In Pharmacy and Materia Medica.

By the 22d section of the Act of Parliament, no rejected candidate for a certificate to practice as an apothecary, can be re-examined until the expiration of six months from his former examination; and no rejected candidate as an assistant until the expiration of three months.

The Court meet in the Hall every Thursday, where candidates are required to attend at a quarter before four o'clock.

The Act directs the following sums to be paid for certificates.

For London and within ten miles thereof, ten guineas.

For all other parts of England and Wales, six guineas.

Persons having paid the latter sum become entitled to practise in London, and within ten miles thereof, by paying four guineas in addition.

For an Assistant's certificate two guineas.

By order of the Court,
Henry Blatch, Sec.

Apothecaries' Hall,
Aug. 1843.

For information relative to these regulations, students are referred to the Beadle, at Apothecaries' Hall, every day (Sunday excepted) between the hours of ten and four o'clock.

It is expressly ordered by the Court of Examiners, that no gratuity be received by any officer or servant of the Court.

Information on all subjects connected with the "Act for better regulating the Practice of Apothecaries," may be obtained on application to Mr. R. B. Upton, Clerk of the Society, at the Hall every day (Sunday excepted) between the hours of one and three o'clock.

A SESSIONAL SYNOPSIS FOR LONDON

	MIDWIFERY.	CHEMISTRY.	ANATOMICAL DEMONST.	ANATOMY AND PHYSIOLOGY.	MEDICINE.	MATERIA MEDICA.	SURGERY.	BOTANY.	MEDICAL JURISPRUD.	For Unlim Attend. to the whole.
										Guineas
Guy's School ……	Ashwell, Lever, Oldham.	Aikin, Taylor	Birkett, Moody	Cooper, Cock	Babington, Addison	Addison, Golding Bird.	Key, & Morgan	Johnson, & Bird	A. Taylor	61
London School ….	Ramsbotham	Pereira	Critchett		Cobb, Little	Pereira	Luke, Curling	Quekett	Ramsbotham, Frampton	50
St. Thomas's ……	Cape	Leeson	Dixon, Trew	R. D. Grainger	Barker, M. Hall, G. Gregory	R. Bennett, Wilks	Green, Travers	R. D. Hoblyn	Leeson, Risdon, Bennet	57
St. Bartholomew's ..	Rigby	Griffiths	Wormald, MacWhinnie	Paget	Burrows	Roupell	Lawrence	Farre	Baly	63
Aldersgate ……..	Waller	Scoffern	White	Goodfellow, Emmott	Aldis, and K. Grant	Willshire	P. B. Lucas	Brown	Hodges, and Scoffern	36
Charlotte Street ….	T. S. Harrison	Scoffern	Dermott	Dermott	Aldis	Ryan, Cooper	Derott	B. Clarke	Scoffern, H. P. Hinde	30
University ……..	Murphy	Graham	Morton, Ellis, & Quain	Sharpey	C. J. B. Williams	Thomson	Cooper, and Liston	Lindley	Thomson	61
King's College ….	Ferguson and Farre	Daniell	Partridge	Todd	Budd	F. Royle	Fergusson	Forbes	W. A. Guy	55
Middlesex ……..	North	Everitt	Tuson, Wilson, Rowden	Tuson, E. Wilson	Hawkins	Crawford	J. M. Arnott	Rogers	De Morgan	£45
Charing Cross ….	Chowne	Fownes	Hird, Canton	T. W. Jones	Sherman, and Rowland	Steggall, & Willshire	Hancock	Willshire	Chowne	40
Westminster ……	Andrews	Lewis	Hunter, J. W. C. Pennell	Hunter	Roe, Kingston	Basham	B. Phillips	Basham, & Bird	F. Bird, and Hodges	40
St. George's ……	Bloxam	Rodgers	Pettigrew, Cane	Lane, W. V. Pettigrew	Goolden	Lankester	Lane, & Pilcher	Cooke	Ancell, and Warder	40
St. George's Hospital	R. Lee	Brande, Solly	H. J. Johnson, H. C. Johnson.	Tatum, and H. J. Johnson	M'Leod	Nairne	C. Hawkins, G. Babington	Dickson	Page	55

There are also Lectures at *St. George's Hospital*, by Sir B. Brodie, on some points of Surgery.—At *King's College*, on Comparative Anatomy, by Dr. E. B. Todd.—At the *School*, near *St. George's Hospital*, on Pathology, by Mr. G. Robinson; on Dental Pathology, by J. Durance George.—At the *University School*, by Professor Grant, on Zoology; by Mr. Quain, on Descriptive Anatomy.—At *King's College*, on Descriptive Anatomy, by E. Partridge; on Comparative Anatomy, by Rymer Jones.—At *Guy's Hospital School*, on Diseases of the Teeth, by Mr. Thomas Bell; on Practical Anatomy, by Messrs. Cock and Hilton; on Microscopical Anatomy, by Dr. T. Williams; on Moral Philosophy, by the Rev T. D. Maurice.—At the *London School*, on Comparative Anatomy, by Dr. Letheby; on the Anatomy of the Teeth and Dental Surgery, by Mr. Craigie.—At *St. Thomas's School*, on Dental Surgery, by Mr. Saunders; on Pathological Anatomy, by Drs. M. Hall and Barker; and on Descriptive Anatomy, by Mr. F. Le Gros Clark.—At *St. Bartholomew's School*, on Natural Philosophy, by Mr. Griffiths; on Comparative Anatomy, by M'Whinnie; on Descriptive and Surgical Anatomy, by F. C. Skey.—At the *Westminster School*, on Physics, by Mr. C. Brooke; on Comparative Anatomy, by Dr. Hunter; and some parts of Surgery, by Mr. Hale Thompson.

HOSPITAL PRACTICE.

The following are the Various Terms for Hospital Practice, (Perpetual, where not otherwise named,) with the List of the Physicians and Surgeons.

Westminster School; *Physicians:*—Drs. Bright, Roe, Kingston, Basham. *Practice*, £21. *Surgeons:*—Messrs. White, Lynn, Hale Thompson, Guthrie, jun. *Practice*, £31.——St. George's Hospital; *Physicians:*—Drs. Seymour, Wilson, Macleod, and Nairne. *Practice*, 24 Guineas. *Surgeons:*—Messrs. Keate, Hawkins, Babington, Cutler, Tatum, and H. J. Johnson. *Practice*, 50 Guineas.——St. Thomas's Hospital; *Physicians:*—Drs. R. Williams, Burton, Barker, and Leeson. *Practice*, £24. 3s. *Surgeons:* Messrs. Green, South, Macknurdo, Solly, and B. Travers. *Practice*, £26. 6s. ——King's College Hospital; *Physicians:*—Drs. Watson, Budd, Todd, Ferguson, and Guy. *Practice*, £21. *Surgeons:*—Messrs. Arnott, Fergusson, Partridge, Simon, and Bowman. *Practice of both*, £36. 15s.——Middlesex Hospital; *Physicians:*—Drs. Hawkins, Watson, Wilson, and Ashburner. *Practice*, for 18 months, £12. 12s. *Surgeons:*—Messrs. Arnott, Tuson, and Shaw. *Practice* (not named).——University College Hospital; *Physicians:*—Drs. C. J. B. Williams, Thompson, and Taylor. *Surgeons:*—Messrs. Cooper, Liston, Quain, and Morton. *Practice for both*, £26. 5s.——Bartholomew's Hospital; *Physicians:*—Drs. Roupell, Hue, Farre, Jeffreson, and Black. *Practice*, 30 Guineas. *Surgeons:*—Messrs. Lawrence, Stanley, Skey, Loyd, and Wormald. *Practice*, 25 Guineas. ——London Hospital; *Physicians:* Drs. Billing, Gordon, Cobb, Frampton, Little, and Pereira. *Practice*, 20 Guineas. *Surgeons:*—Messrs. Andrews, I. Scott, Luke, Hamilton, and Curling. *Practice*, for 12 months, 30 Guineas. ——Charing Cross Hospital; *Physicians:*—Drs. Shearman, Golding, and Chowne. *Practice*, 15 Guineas. *Surgeons:*—Messrs. Hancock and Avery. *Practice*, 15 Guineas.——Guy's Hospital; *Physicians:*—Drs. Bright, Addison, Babington, Barlow, and Hughes. *Pupil* for 18 months, £15, 15s.; for longer period, £24. 4s. *Surgeons:*—Messrs. B. Cooper, Key, and Morgan, for Practice 50 Guineas.

TO CORRESPONDENTS.

B. J. J. *submits to us "a grammatical query" as to the strictly correct meaning of the words "I shall expect to see you this evening." Our correspondent thinks, if we understand him, that the expectation so expressed would be properly answered by the party's being seen the following, or subsequent, evening. We are of a different opinion." "This evening has reference to* seeing, *rather than to expecting. A phrase including the infinitive mood, as "to see you," is sometimes the nominative and sometimes the subjective or accusative case to an active verb. In this place it is the subject. The "seeing you," this evening is the thing he* will *be expecting this evening. If the "seeing" had reference to another, or subsequent time, "this evening" should have immediately preceded or followed the verb expect, and words expressive of a seeing on a future day, used. The whole difficulty has originated in the facts of the seeing necessarily following the expectation, and the possibility of our expecting "this evening" what we may not expect at this moment.*

A Correspondent favours us with an extract from the "Patriot," *from which it appears that a new chapel was commenced in Bagnigge-Wells, for the congregation lately assembled in Fetter Lane. The* "Patriot" *enters into the list of the reasons for deserting Elam Chapel, and avows that the* "principal" *one was "the confined state of the immediate neighbourhood, and the noxious vapours arising from the vaults beneath." We recollect that the* "Patriot" *was among the most active and violent opponents of the project for destroying intramural interments, and this admission, therefore, comes with more power into the service of common sense and decency: what sad, what humbling, what indignant reflections occur as the benevolent and good mind ponders on the one fact, so slightingly mentioned, that hundreds of well-disposed, pious people, while met together, after six days of the world's troubles, to warble the heart's sacred affections in the service of their pure Maker, were weekly, for years, inhaling the pestilent and deathly exhalations of the unclean dead, festering and corrupting beneath! the viewless elimination of whose horrible effluvia was a silent but mighty homage to the Deity of Mammon—a more scathing and blasphemous phillipic against religion than infidelity in its cleverest or bitterest moment ever emitted. We are far from enthusiasts, but we do cry—and cry aloud—for God's sake, for religion's sake, if not for that of public health, shut up for ever those* Christian *dens of foulness, disease, pestilence, and death.*

Amicus Curiæ *calls our attention to our Latin motto, where we had discere for* dicere—*a small literal difference, with a huge difference of sense. The truth is, that we rarely commit a Latin line to our printer without trembling for its fate. He is fond of shewing how absolute is his command over the language, and accordingly knocks about its words with the ease a pugilist "polishes off" a raw aspirant. If orthography in a dead language can be avoided by any possibility, he will achieve the task. As a joke ceased to be a joke in the mouth of one of Sheridan's friends, so Latin in his hands feels itself obliged to look as little like Latin as possible: we are promised, however, better things.*

P. S. *calls our attention to another work by an author, not Erasmus Wilson, where Sir James Clark's name is paraded after a similar fashion. The mention of the title might cause unnecessary personal pain, and, therefore, we avoid it; but we cannot help half congratulating, half-condoling, with Sir James, on the fatality which introduces him into the book of every young author, either as the subject of dedicatory distinction, or vindicated acquaintanceship. On the one hand it is a pleasing proof that he is somebody, not without the power of being useful; on the other, it must trouble him with a feeling like that expressed by Pope:—*

One dedicates in high heroic prose,
And ridicules beyond a hundred foes.
One from all Grub Street will my fame defend,
And more abusive, calls himself my friend!

Dr. Clay's case of Ovarian Extirpation is in type, but the arrangements of our matter excludes it till next week, when it will appear in its "totality."

A Non-Medical Reader of Medical Works *is thanked for his courtesy, but his offer declined. "Stupidity and brutality" are hard terms, but exist in sufficient force, we fear, in our contemporary, to justify our Correspondent's abandonment of it; but if adoption of us is to depend on acceptance of his proposal, we must fain forego the honour of his readership.*

Guy's Hospital.—Justitia *calls our attention to the "haughty and supercilious" demeanour of the porter at Guy's, as interfering greatly in the benevolent views of the founder of that noble charity. He is charged with acting as though he could receive or reject poor candidates for admission* ad libitum. *Malignant scowls, ferocious treatment of the poor, are charged on that important functionary. This is of course a mere* ex parte *statement, and may, therefore, have but the slightest foundation; but even in that case the bad effects produced by his demeanour on our Correspondent, offer a strong argument to the porter—and if not to him to his superiors—for better and gentler treatment to the poor. The porter knows, or should be taught, that he is the servant not of the Governors, but of those very poor he may be tempted to treat contumeliously; and that the whole institution belongs to them. The true test of* a vulgar *and* a bad *mind is harsh treatment of those whom fortune has treated harshly.*

Mr. Page, *Surgeon to the Infirmary at Carlisle, writes to us, calling our attention to some recent evidence on the state of Clarke when first seen by Dr. Jackson and Mr. Elliot. We have referred to this before, as distinctly shewing (if the witnesses may be believed) that the patient was not in the hopelessly advanced stage of disease we had imagined, but we shall not go further than give Mr. Page's remarks:—*

"If the patient on the 27th April were in the advanced stage of (scrofulous) morbus coxarius, described by the medical men who then saw him, in all probability, he was labouring under that disease when discharged from the infirmary on the 11th January, and if then so afflicted, his treatment while in the infirmary could not have been judicious. Whether or not he was in the state described—'in the last stage of hip disease,' and 'just about dying'—let that evidence determine. Much misapprehension appears to have existed in this case from Dr. Barnes having entered in his book 'Rheumatismus-morbus coxarius,' it being supposed from this that Dr. Barnes was aware of the existence of the disease of the hip, but it may be seen that at the inquest Dr. Barnes distinctly stated that he merely added morbus coxarius, because the structures about the hip were more particularly affected by the rheumatic inflammation, and he also stated that he was quite satisfied, from the examinations of the limb which he frequently made, that the man was not labouring under the disease of the hip, to which the term 'morbus coxarius' is commonly applied."

M. D. *suggests the use of the air-pump in cases of bite by a rabid dog. The suggestion is good, and has been acted on with good effects after the bite of vipers. He calls our attention to a newspaper paragraph in which the use of mercurials, as a preventative is recommended.*

The Carlisle Inquest.—*The* bellum medicorum *still rages with pristine fury, and, like most wars, little to the advantage of the belligerents, and still less to the cause which it is supposed to be waged for, viz. legitimate medicine. The last step is the alleged disproof by the infirmary authorities of the evidence brought forward by Mr. Elliot, and his friends, as to the danger of the patient when he fell into their hands. Not contented with self-vindication, the medical officers now push the war into the enemies' country, and bring the charge of death on the accusers—the last attendants. Has Le Sage written for nothing? As Napoleon had it, can't the Carlisle medical men wash their dirty linen at home? What good on earth can these squabbles do except to make the two respectable Carlisle journals interesting, journals which, unlike the* "Medical Times," *and scientific papers, take the reproach of history, and are never worth reading, except the world furnishes them with calamities? Is this the mission of the Carlisle medical men? If not, will they hear our paternal commands, and be as silent on this matter for the future as common sense and duty urge them?* Verbum sapientibus satis. *Whoso, therefore, now advances afresh before the uninitiated, must expect to be chronicled as "insipiens."*

Our index for the last volume, which will be considerably fuller, *and more perfect, than any we have previously given, will be ready unstamped on Tuesday next, and stamped, as a supplement, on Friday next. It will be a separate sheet, and the price will be 3d. As only a proportion of our readers are presumed to bind their numbers, those who receive the journal through newsmen and booksellers, should give orders for the index if they require it.*

Portfolios for the Medical Times.—*Our bookbinder has prepared an ingeniously made portfolio of great neatness, and lettered on the back, in which the numbers of two volumes can be deposited, as they are issued and preserved convenient for reference, and clean for binding. The covers are composed of such strong materials, that the portfolio, with a single number, will stand like a book on the library shelf. The price is 5s.—second quality, 3s. 9d. Copies are now ready and may be had by giving an order to any bookseller or newsman, to whom the customary allowance is made.*

Other correspondents next week.

THE MEDICAL TIMES.

Saturday, Sept. 30, 1843.

Be to their faults a little blind,
Be to their virtues somewhat kind.

We have, in the preceding list, the prospects of medical education in the metropolis for the opening medical year. To use a vulgar phrase of some expressive power, it offers a rather "blue look-out;" a look-out as little cheering to many of the *proposed* teachers, as to the *proposed* taught. Negatively and affirmatively, our winter *show*—as the cattle-dealers say—is, almost in excess, bad. The men who know something—who have minds to take in Nature's beautiful system of medical action—who have amassed the fruitful experience which *has* made them, and which, communicated, *would* make others something in science—these men, the Prouts, the Coplands, the Copelands, the Clarks, of either orthography, the Elliotsons, the Chambers, the Guthries, the Hollands, and the men who keep British Medical Science, before Europe, in somewhat respectable circumstances—these are the men who, as if carefully weeded out, do *not* teach; and instead of them we have,—— but we should never end the catalogue if we begun the enumeration, and then only get for the pains as many nests of hornets about our ears, as there are schools—each self-important animal buzzing in endless, stingless activity around us, and shewing how *little* our observations affected him, by making it a matter of life and death to him that his friends should, on his single word, think us animated by a personal antipathy, however much he be a stranger, or by a jealous rivalry, however in infinity a nobody. But there they are, and we must accept them, if not as teachers accomplished, as *un fait accompli*. They have possession of the hospitals; and, though we may admire, we must submit, solacing ourselves with the observations of the poet:—

Pretty in amber to observe the forms
Of hairs, or straws, or dirt, or grubs, or worms;
The things, we know, are neither rich nor rare.
But wonder how the devil they got there!

But this general observation would be very ill-applied, if it were supposed we did not admit the competency of some of the lecturers. Some are truly worthy of their position; they have proved it by past labours: to these a few may be added, whose competency depends on the rich promise which early efforts offer. The names of all these are before us in an instant: we could wish there were no invidiousness in the mention. Unfortunately they are

——— rari nantes in gurgite vasto.

Guy's offers us this year no change worth speaking on. The system of subsidiary education, by which Dr. T. Williams takes Microscopic Anatomy, and Dr. G. Bird, Physiological Chemistry, is a useful innovation, and a tribute to the requisitions of an improved time, which we did not expect. Beyond this, and the loss of Bright and the gain of Lever, we have the old faces and voices of former years. Despite the power of Mr. Harrison over this hospital, and all the mischiefs which nepotism must, in its management, cause, it yet maintains a respectable place, even in reference to science. The lecturers and hospital officers are nearly all, more or less, devoted to their profession, and, entrusted with the work of Medical Education, do here actually give themselves the trouble to form, not only ideas, but independent ideas on the different points of medical and surgical practice.

Our opinion on St. Thomas's must be much less favourable. There is a proverb which makes propinquity to a church imply a considerable retrogression from what the church should lead to. St. Thomas's, though very near to Guy's topographically, is very far, indeed, away from it morally. *That* is like an old English gentleman, not without solid wealth, but above making a show of it: *this* is like a swell mobsman, gaudily arrayed, but dealing in flash notes. Whatever the former has of worth, comes out in further acquaintance; whatever the latter has, is broadly displayed on the surface. One may, perhaps, know too much of the one, but we cannot know too little of the other. Indeed, we have taken some pains to convince ourselves that St. Thomas's is not out of the pale of the profession. The system of advertisements it carried on—one so peculiar—its nocturnal donations of tea and coffee to all the world, *et alia similia*—have filled us with a strong suspicion that there is a taint of empiricism about it. Hospital schools, like professional men, have a law of etiquette, and should not take an advantage of one another by inveigling manœuvres. But, we presume, it is with such institutions as with the animal world: they use what they are strongest in. We had hoped, however, that the conductors of this school would not have outraged public taste by exhibiting themselves a second year in connection with Dr. M. Hall. If we mistake not, he has been charged with the medical advisership of those swindling and vulgarly-low scoundrels who threw so many orphans, widows, and respectable families into beggary, with their West Middlesex Insurance Company. He has attempted no satisfactory explanation of so unfortunate a circumstance occurring in the career of a gentleman and a physician. He made statements in reference to this Journal, publicly which its reporter, editor, and the latter's assistant, proved, by incontestible evidence, to be falsehoods. He has been charged also with writing, not only reviews, but the most fulsome panegyrics, week after week, in the *Lancet*—of his own labours and books. This is a charge which we have distinctly alluded to, and the proofs of which, *we know*, are in Dr. Hall's handwriting, yet in existence. Without going one step farther than this—without touching on any topics which are not of the gravest import to the *public* character of a *public* teacher—we have yet quite enough here to say—we demand explanation, or respect for ourselves will make us avoid your society. Whether Dr. Hodgkin, in retiring from the co-professorship, has acted on this principle or not, it is not our place to say; but we may affirm that, in his place, we should have felt it a duty to have acted in like manner.

St. Bartholomew's maintains its old place, and with the accession of Skey, Laurence, and Roupell (and we are scarcely entitled to overlook Burrows) cannot but maintain its reputation in a competition so little formidable as that generally offered in the present year.

The University and King's College we pass by, with a reference to their advertisements, and come to the Westminster School, to which we may justly apply the words addressed on a more solemn occasion to the Jewish capital. We have certainly not been sparing of our advice, warnings, or objurgations, to those who have the management of this institution. We have pointed out the seat of the malgovernment—shewn the source of its numerous evils—and named, in no indirect terms, the result of prolonged neglect. We are afraid that all the future can offer us, will be the fulfillment of our prophecy. With every possible advantage a school can have, apart from its conductors this has always been but a sickly, delicate affair. The fault lies in *the system*, which exists around it and over it like a fetid atmosphere, fatal to health and vitality. The only two refreshing objects in the landscape are Dr. Hunter and Mr. Phillips; and, if we are well informed, they are where they have no business, and are looked on by the men of the system as *lusus naturæ*. Two little matters in reference to this School, require a moment's remark. We are told that Mr. Guthrie is to give a course on some of the more important points of surgery. The secretary and the nine or ten lecturers are more or less pledged to this statement; yet we believe we are entitled to an excuse if we hint a doubt about Mr. Guthrie's having promised any such thing. We know that his name has been used before, without his sanction, and we would hazard a reasonable wager that this year is no exception to the rule. One reason for strengthening this suspicion is, that Mr. Hale Thompson has been subsequently added as coadjutor in the course—a partnership, Mr. Guthrie, with his eyes open, would not, we surmise, voluntarily enter into. Indeed we hardly know which is greater—the common honesty which would advertise Mr. Guthrie, or the common sense which would make a trump-card of Mr. Thompson. The subject offers a tempting matter for our friend, Mr. Paget's microscopic enquiry.

The second point refers to the appointments in the hospital, which were left open to the competition of the pupils. This was an important innovation, which deserves, as it has received from us, all praise. Is this plan to be practically carried out? We earnestly trust that it may be, and that the sinister report which has reached us, that a worthy and hard-working student, who has been recommended by the lecturers as competent to the assistant-house-surgeonship, will not be disappointed in his legitimate aud well-earned expectations. This is, indeed, the grand attraction of the Westminster School, and if they practically deprive themselves of that, they will be poor indeed.

St. George's calls but for one remark. With its customary service, it has Sir B. Brodie engaged for a course on some important points of surgery. We differ nearly on every point of governmental policy (in medicine) from that baronet; we do not much esteem the almost Jesuitic adroitness with which he will reach the end he first aimed at; but we should be doing ourselves great violence if we reserved the expression of our pleasure at seeing him still using his high abilities and great experience in the great cause on which we can all occupy catholic ground—Medical education. Our regret is, that many who *could* be as useful to the young generation of practioners, are either kept, or keep themselves, from the useful and ennobling labour.

On the Private Schools nothing need be said. Their own advertisements tell their "plain, unvarnished tale;" and we dismiss them with the expression of a hope that, as there are now but three, they will not fail of that success which, on so many accounts, dear to science, they all deserve.

One word to the Students before concluding. The Schools "before you where to choose," exercise a sound judgment on their different pretensions to your regard; they are not such an equal choice of evils or blessings as to cause any interminable balancing. In your choice, neither over-esteem the question of proximity, nor yet wholly disregard it. The nearer, perhaps, you are to your hospital, the more likely are you to be a punctual and constant attendant. You must have exercise.

but you may get it otherwise than by having your lodging far removed from the scene of your duties. But on this matter a hundred circumstances must guide you. To a man of unswerving resolution and untiring perseverance, distance will only whet the appetite to exertion: to others, (the majority) who will allow slight obstacles to thwart good wishes, proximity will coax to regularity. If you can, make your abiding place, while in town, in a family where you may meet the comforts of a home. You will thus escape a thousand miseries, with a peril of shipwreck which few foresee, but too many annually suffer. In reference to your educational duties, remember that Anatomy is the great basis on which all medical perfection rests: Physiology, Pathology, and even Therapeutics, are built on it as their only solid foundation. The true system of learning is to proceed from details to principles: it is the way to avoid being a mere theorist: but to stop at details is to be a mere automaton. You, cannot, however, know too much of the mechanism of that subtle piece of machinery it will be your vocation to keep in careful adjustment and easy action. Do not be distracted by any notion of a difference between Surgery and Medicine. The elementary, nay, nearly all the knowledge required for both, is identical. As a physician, you may not be called to amputate a leg, but to know how, can do you no harm. So, as a surgeon, you may not be called to prescribe for phthisis, but a knowledge of auscultation cannot, therefore, be an injury. In *later* years, you may decide to what particular branch, or branches, you will devote an exclusive or disproportioned attention: till then, the whole range of Surgery or Medicine offers nothing unworthy your attention and beyond the sphere of your calling. Half our progress has been owing to the lights the different branches of medicine have mutually thrown on each other. We admit, and we deeply deplore, that there is not enough of encouragement for you in your arduous duties. The dresserships, the clinical clerkships, the house-surgeonships, should be premiums in every hospital for exertion; not, as now, indulgences purchased by wealth. The same principle should extend to the higher public medical employments. We hope a reformation is rapidly arriving, and the harbingers of it are already in the horizon: but, in the mean time, the more glorious field is open to your labours; since it is a field in which more difficulties are to be overcome. Every triumph now won is purely your own; it calls for greater energy, and indicates higher powers of the soul. Success, now, is twice success under better circumstances. We urge, therefore, indomitable resolve and ceaseless application, and promise you that Science, though now in one of her most prolific eras, will yet recognize you in the list of her benefactors.

Sir F. Pollock, and Mr. Martin, have given an opinion that none but *English* "Apothecaries" can be legally Poor-Law medical officers.

PERISCOPE OF THE WEEK.

[London and Edinburgh Medical Journal; Lancet; Medical Gazette; Gazette Medicale; Muller's Archiv; American Journal of the Medical Sciences; Guy's Hospital Reports.]

Disease of the Kidneys attendant on Severe Injuries or Operations.—Dr. Chevers believes that the fatal termination, after severe operations, &c., from internal inflammations, is dependant on a set of definite constitutional causes, induced by excessive labor, constant exposure to extreme changes of temperature, intemperance, and not unfrequently, the action of syphilis, and the abuse of mercury, by which such a generally diseased condition of the system is produced, that its powers of reparation after injury have become almost entirely destroyed. This state of the system, which is often spoken of under the vague and unmeaning term, "cachexia," is usually clearly traceable to a morbid condition of some of the principal organs of nutrition and elimination; the kidneys, liver, or spleen, have long been either in a state of confirmed disease, amounting to disorganisation of portions of their structure, or have, for a lengthened period, remained in a condition of such intense functional derangement, as to be continually liable to fail in their actions, upon the induction of any state of unusual constitutional excitement. Out of 153 cases occurring in Guy's Hospital of severe operations, extensive accidental injuries, or wounds and contusions of an apparently trivial kind, all of which terminated fatally, by secondary internal inflammations, the kidneys were observed to be in a state of morbid disease, either presenting remarkable congestion, softening, mottling, or the granular or cystiform alterations, in 72 cases: the appearances of the kidneys were not mentioned in 44 cases; they were stated to be without any apparent disease in 26, and their condition was doubtful in 11. Of the above cases, in which the kidneys were either not examined, found healthy, or considered in a doubtful state, there was morbid disease of the liver or spleen, or both these organs, in 21 cases, giving a total of 93 cases, in which one or more of these important organs was found in a state of lesion. In a large proportion of these cases, the diseased condition of the liver, spleen, or kidneys, had evidently existed for a considerable time, but in very many, especially the renal cases, the changes were so recent as to render it probable, that almost immediately after the operations or accidents, either visceral disease had been excited from a latent to an active condition, or that a state of acute congestion had suddenly been established in organs which had hitherto been suffering merely from chronic degeneration. Secondary hæmorrhage, after operations, is apt to occur in persons affected with renal disease. Mottled kidney is a very frequent attendant upon old strictures of the urethra, and persons thus affected are liable to die of peritonitis or other serous inflammation or cystitis. They are also liable to be attacked suddenly with inflammatory œdema of the lungs, and cerebral effusions. Adults affected with calculus in the bladder, are often the subjects of an active form of Bright's disease, in which case, an operation seldom fails to be rapidly followed by fatal inflammation of serous and other structures, and there is also considerable tendency to secondary hæmorrhage. Syphilitic patients are liable to be unexpectedly attacked with œdema glottidis, purulent inflammation of the larynx, and diphtheritis, or with rapidly destructive forms of pleurisy, pneumonia, and peritonitis. It is generally found that individuals who die thus, have long been of intemperate habits, have suffered from the abuse of mercury, and become the subjects of mottling or granular disease of the kidney. Persons suffering from asthenic anthrax are liable to acute pleuritis, and other internal inflammations, the effused fluids being occasionally sanguinolent. In these cases there is marked renal disease. The practical rule deduced by Dr. Chevers from these facts is, that in every case admitted into the surgical wards of a hospital, the condition of the urine should be tested, because although it is to be feared that the more confirmed forms of renal disease never undergo a complete and permanent cure, yet in the early stages, while vascular turgescence only exists, it is certainly amenable to remedies, and an operation may be performed after its removal with less danger. Dr. Chevers' advice may be made applicable to every organ of the body, nor ought the surgeon to perform an operation of any importance without first ascertaining that the organic system is in a state of integrity.

Hydrocyanic Acid in Gout.—Dr Hunter Lane states that he has for some years past tried the effects of the topical application of hydrocyanic acid to gouty joints. His mode was to have the acid, Scheele's strength, applied by a camel's hair pencil, for from three to five minutes continuously every two or three hours. He has, however, never seen its application followed by any alleviation of the pain, as described by Dr. Seidel. The last case in which he recommended its use was that of E. G. H——, Esq., 7th May, 1841, who had gout of the great toe. Mr. J. S. Harrison, Surgeon, Lancaster, was in attendance, and very carefully and assiduously pencilled the joint with the acid without the slightest effect. The fidelity with which it was here administered, and yet the fruitlessness of the application corresponded with his former experience, and has led Dr. Hunter Lane to abandon its topical employment in gouty affections.

The Uterine Sound.—Dr. Simpson, Professor of Midwifery at the University of Edinburgh, employs an instrument for the exploration of the uterine cavity, somewhat similar to a small male catheter, terminated at its extremity by a rounded knob or bulb, about an one-eighth of an inch in diameter, to prevent injury to the structure of the womb. The stem is about nine inches in length, and graduated so as to render its employment, and some of its indications with regard to the measurement of the uterus, more precise. It is introduced while the patient is lying either on her back or her left side, the fore-finger of the right hand serving as a guide in the one instance, of the left hand in the other. It should be passed in the line of the axis of the brim of the pelvis. By means of this instrument a more perfect tactile examination of the organ can be made, as it can be moved in any direction by the sound, and can also be rendered fixed and immovable by it. Dr. Cumming has found it of service in two cases of malposition of the uterus.

Evolution of Caloric by Elastic Bodies.—Mr. Winter says that elastic substances, or bodies capable of reassuming their original shape, when the power operating to extend them is removed, give out a quantity of caloric proportionate to the mechanical tension to which they are submitted. It is probable that this manifestation of heat by elastic bodies, when stretched, is only a modification of the general laws regulating the production of caloric during the changes of form in matter generally,—some sudden alteration of the position or shape of the component particles thus rendering heat sensible which was before latent.

PENCILLINGS OF EMINENT MEDICAL MEN.

BRANSBY COOPER, F.R.S.

Bransby Blake Cooper may assert with truth, in the professional world, what another great man has frequently remarked, that he was the best abused man in the empire. He has been alike the subject of panegyric and reproach; and his character and competency for the discharge of public duties have been made the battle-ground for rival editors to shiver their literary lances in. He has with difficulty, and sorely wounded, survived their vituperations, their revilings, and their injudicious commendations. For it is a matter of question, whether his open foes, or his too zealous friends, in their mutual exaggerations, did more damage to his reputation. During this war of words, all parties vied in offering homage to his personal worth, and acknowledged that the openness of his character, the independence of his conduct, the amenity of his manners, obtained the regard of all who knew him, and procured for him from many who doubted his scientific acquirements, and detested the system of nepotism by which he was elected, great (and we believe sincerely) merited popularity. But we are advancing into the question too precipitately and without method.

B. Cooper, F.R.S., is the son of a clergyman, the brother of Sir Astley Cooper, who, it appears, possessed talent without intellectual energy. By the interest of his uncle, Bransby was uplifted over the head of Mr. Callaway, who was next in rotation to the office of surgeon. He did not undergo the ordinary course of gradation, but was at once made surgeon by the assistance of Mr. Harrison, an event which appeared a great advantage at the moment, but which, in the sequel, proved the source of deep mortification and great injury to his subsequent career, and provoked the press to rancorous hostility, in which the great majority of the profession joined, feeling naturally offended that every right principle should be so openly departed from and disregarded; that instead of having men of experience appointed to fill public functions, he was appointed for interested purposes to gain experience—men every way competent being in the meanwhile set aside—debarred by unjust bye laws from being even candidates.

He became surgeon in 1825. He had previously served in an artillery regiment in the Peninsula. He has, in consequence, a dash of the military man in his carriage and bearing. He is fond of affecting an air of *fierté;* but his facetiousness and good nature ill accord with this relict of military discipline. He carries his hat cocked on one side like an Irishman, which gives him a jaunty, careless, rakish air. He is a good figure, about 5 feet 10 inches, of easy, prepossessing address, sallow complexion, small head, without any land mark or mountains of metaphysical manifestations. His profile is sharp and genteel. In the year of his election he dedicated to Sir Astley a Treatise on Ligaments, a bundle of observations tied together neither slovenly nor uselessly. At a later period he wrote "Surgical Essays," the result of clinical observations made at Guy's Hospital. His "Remarks on Dislocations" are worth reading, as also on "Fracture of the Neck of the Thigh Bone" within the capsula ligament, an accident of very common occurrence, caused usually by some very trivial force, such as a slip. He enters into a controversy that took place between the late lamented and deservedly esteemed Mr. Earle, late surgeon of St. Bartholomews, and Sir Astley Cooper, as to the union of the neck within the capsular ligament by ossific deposition: of course, B. Cooper most obsequiously follows the opinions of his uncle. He calls, very unjustifiably, Mr. Earle's opinions *theories*, and Sir Astley's opinions *facts*, founded upon his practice and experiments. In his zeal to extinguish Mr. Earle, whose mild and philosophic essay he would have done well to imitate, he goes so far as to state that it is nature's principle to prevent rather than to allow the proper re-union of this part! Sir Astley himself says that if the fracture occurs without separation of the periosteum, that then the parts will be consolidated by bone. Mr. Amesbury, Mr. Langstaff Hewson, Dupuytren, preserved specimens in which fracture had taken place within the capsule, and where they had been united by bone, nor will the presence of Synovia between the fractured surfaces prevent union any more than in the fractures of other joints. To the means employed are we frequently to attribute the failure. The diagnosis he most relies on, in fracture of the neck of the bone, is the facility with which the surgeon can by a slight extending force bring the limb to the same length with the sound one. It is distinguished from dislocation by its mobility, and by its fixed state in cases of dislocation. This last work was dedicated to Benjamin Harrison, the Treasurer of Guy's (who had inducted him two years after his apprenticeship into the situation of surgeon) in the following epistle, in which, in befitting terms, he acknowledges his obligations:—

My dear Sir—I beg leave to dedicate the following to you, as it enables me publicly to thank you for the many acts of friendship which you have constantly extended towards me, and it also gives me an opportunity of acknowledging that the source from which I gained my information has depended much upon your zealous and active *management* in the affairs of Guy's Hospital, as upon the situation of surgeon, which I have the honor to hold through YOUR KIND SELECTION.

Your very grateful and humble servant,
B. C.

In these essays he advocates the views of Mr. Key on strangulated hernia. When the united schools of Thomas's and Guy's repealed the union, and Guy's established one themselves, Bransby and Key became the lecturers on anatomy and surgery.

The best lecture, we may say only lecture, Bransby Cooper delivered in his life, was the introductory on that occasion. It was published in the leading periodicals of that day. Immediately after followed one delivered by Brookes. One cannot help being struck with the great difference, the reach, the grasp of thought, the scientific lore, the power of language of the one, and the ordinary but respectable common-places of the other.

As a demonstrator of anatomy he was fluent and effective, and while he discharged the duties annexed to this office, he was much respected for the accuracy of his anatomical knowledge, which any man of ordinary mind may, by drudgery, make himself master of. He was even accused of being too minute, and that some of his ligaments expanded and were guilty of more subdivisions than nature intended. Be that as it may, his industry was undeniable. Had he not been assisted by extraneous aid, and been left to his own resources, he might still have continued to teach this branch with satisfaction to himself and benefit to others. It was bad policy to give up a situation in which he was successful, and risk another where greater capabilities were required and success was dubious. It is a great error to suppose that the transition from the one to the other is easy. In one retentiveness of memory, practice with the scalpel, are the main requisites; judgment, reflection, powers of illustration, and analysis, quick perceptions of differences, are the great distinction between the two branches of education. The lecturer must be an accomplished speaker, able to make an impression upon his audience; he should possess a graceful delivery, and clothe his ideas, in ornamental and classical language, so as to fix the attention and to improve the taste as well as interest and refine the minds of his pupils.

These are requisites that do not fall to the lot of every man. The attempt on the part of Bransby was a total failure; he was, however, urged on by the folly and flattery of his friends. So far was the *patrual* prepossession carried, that Sir Astley in his evidence on the trial of his nephew against the *Lancet*, declared on his oath the students were so satisfied with the clearness of his lectures, that they felt pleased that a man who had so easy a method of communicating information, should be placed in a situation where he had the means of conveying it!

We had more recently an opportunity of judging of the justness of the criticism that was passed at that time, when he delivered what was by courtesy termed a short course of lectures on surgery about twelve months ago, at the College of Surgeons. We can with truth affirm, and the majority of metropolitan practitioners were present, that such an exhibition, such a psychological curiosity, was never witnessed within the theatre of the college, numerous as are the incapables who figure there, dull and unintellectual as must be the atmosphere where men are selected by jobbing family influence and intrigue, where there is no competition allowed, or the heart warmed by the twitches of emulative emotion, or the fibres of the brain become developed, or, as the ancients would say, *nervose*, from the exercise or gymnastics of ambition's generous and soul-inspiring rivalry. Here the genius of dullness, with its leaden wings, presides over the scene—none of its congenial votaries know or feel the promptings that rouse and stimulate to excellence.

All the functionaries were assembled in all the pride and circumstance of state. Stone looked grave and austere as a statue; Belfour dignified and abdominous as an alderman; Clift all anxiety and good nature; the President in his robes of office; all the Council curled and Macassared: various other supplementary signs of excitement. All this was perfectly natural. It was the moment when all the calumnies against nepotism were to be refuted—when the murmur of general indignation was to be appeased—when their justification was at hand. It was the hour when mind and matter were to reflect mutual splendor upon each other—when the appetite for information was to be allayed—when the triumphs of science were to be displayed. It was to be a date or era in the history of the college—when the rebuked Press was to be silenced—when the "*Pures*" were to assert their ascendancy, vindicate their pretensions to *superiority*. He was the type of a party—their principles and system were personified in the orator of the day. From the top to the bottom, the benches were crowded to suffocation. Many were attracted there by the hope, that, despite his position, his bluntness would break into reproof of their corporate delinquencies. He bowed—he blew his nose—he coughed and cleared his voice, and arranged his robes and his manuscripts—he looked at the clock and then at the crowd. He commenced—a solemn pause. He admitted his inability—he bespoke indulgence. All right. He read—he *rushed* along at a railroad pace. He complimented the college—he be-praised his colleagues. What followed next we know not, for it was like some dramatic pieces—so unconnected, so detached, that they may be played in the beginning, middle, or end, as far as order, sense, or intelligibility was concerned. It was not of very material importance how it proceeded—it required no epic invocation—it disdained method and arrangement—it fettered itself not with exordium or peroration—it was a—— we were going to use an old Latin phrase, but it would appear pedantic, and would cause a general meeting of the Council to try to translate it. We can as well express it in the Saxon: it was sad, silly, skimble-scamble stuff. The matter had this merit: it was strangely miscellaneous. The diversity despised the toil of judicious selection. Half an hour having elapsed, in which, if he did not edify, he certainly astonished his audience, he came to a full stop. It was a period. For what, think you, gentle reader, was the cause? The manuscript was at an end. The song was sung. In his perceptive faculties the organ of time was defi-

cient. He had never calculated how many vowels and consonants can be ejaculated in an hour. He pleaded for pardon. The audience felt for him, and a generous cheer rescued him from his painful embarrassment. He proposed, as he had nothing else to entertain them with, to begin again, to re-read his manuscript. They smiled assent. The staff of the College was abashed, confounded. The hour was thus spun out. Reflections were awakened which, while they regretted the want of the possession of first-rate ability on the part of the individual, justly condemned the party that deprived the profession by their narrow and illiberal enactments of men who would be an honor to our art and a blessing to society. All felt that it was absurd to expect that we can have anything but a millennium of imbecility, until we force back the penal bolt that excludes from participation, or rather the hope and prospect of participation, the great body of the members. Until Rome built the temple of Apollo, and admitted all to compete for the laurels, she had but few worthies to occupy the niches. Open the high places, honors, and emoluments, to talent, by making them accessible to all the members, you will soon have eloquent men who can think aloud, deliver themselves correctly, *viva voce*, without sermonising, or reading out a dull and monotonous string of sentences from a few sheets or scraps of *fools*cap, and call or dignify it with the title of the delivery of a course of lectures!

On the following days the Thanes fell off. He was only surrounded by the officers of the college, a few hospital surgeons, and their satellites, who made a show of interest in his discourse to try to bolster up incapability, anticipating that some day he will return the civility, when they by the rule of rotation come to inflict their lucubrations upon their auditors. The hall was virtually deserted. He entered into the modifications, giving simple principles, without even advancing any novel, original, or comprehensive views. He was as minute about trifles as if he were addressing pupils, not practitioners. The various trivial circumstances and directions which he detailed might be information to some of the "Pures," but became ridiculous when addressed to a body of surgeons. He consumed half an hour in describing the mode in which he operated on a tongue-tied child.

He occasionally dispensed with the foolscap, and trusted to the happy inspiration of the moment. He then seemed to enunciate what ever came uppermost, we were going to say without art, and we are in candour obliged to add without discrimination; for he really did not appear to know what was important, and what was its converse. He talked gravely on matters of no moment, and very slightly on very serious. He is not deficient in language, which bespeaks a cultivated mind; his style then becomes gentlemanly and prepossessing. He has a slight lisp, which adds, rather than detracts, from an agreeable effect. Several of his practical observations were wholesome and sound; and we would be inclined to infer, and not incorrectly, that he was a good surgeon, but an indifferent lecturer. At this we are not surprised, his indefatigable industry, the auspicious circumstances he enjoyed for the cultivation of, as well as his natural predilection for, the profession and the great success of his uncle acting as a stimulus. A good ground-work in the shape of preliminary as well as professional education, the eagerness in which he engaged in the pursuit of science, his perseverance in the study of anatomy, all prepare us to expect that he must by this time be a good and safe surgeon.

Some families are remarkable for the possession of *great*, others for the cultivation of *certain*, qualities. Bransby seems to possess, in common with his distinguished relative, considerable diagnostic tact, boldness in acting, and resolution in adhering to his opinion when once formed. We have seen him correct the dogmatism of Key, and prove the danger of acting too precipitately upon *quick perceptions*. Some few months ago a man was brought into Guy's with what all the staff pronounced to be a case of strangulated hernia. Bransby differed with them, and denied its existence, but, owing to the positive and united asseverations, he operated, and made it evident that he was right. On the autopsy it was ascertained that the patient had died of peritoneal inflammation. The day before the examination took place, Mr. Key, anxious to maintain the infallibility of his judgment, amused us by drawing diagrams of a peculiar and very masked form of hernia, which he predicated it to be. Another instance, out of many, the sequel showed how cautious those self-opinionated "Pures" ought to be in hazarding opinions that a few hours will prove unreal and mistaken.

We come now to a subject we would fain avoid. It is the damning spot on his otherwise fair escutcheon. Our readers are aware that we refer to the unfortunate operation on a patient at Guy's, during which he underwent great suffering, was kept one hour upon the table, and died in twenty-nine hours after the operation, leaving a wife and six children to bemoan his loss. The report of this case in the *Lancet* made much noise at the time, and for which Mr. Cooper instituted an action against Mr. Wakley. There was a great diversity of opinion upon the amount of culpability that ought to attach to the surgeon. The majority of medical men were disposed to be severe, many were disposed to extenuate, from the perplexing nature of the case, while the few, among whom were the hospital surgeons, from selfish motives, and not knowing how soon it might be their own case, made common cause with Cooper, tried to hold him guiltless, and to represent him as the victim of a malignant persecution. They made no distinctions between attacks on private character, and animadversions on the conduct or competency of individuals holding public and responsible situations. Slander on private character was confounded with denunciation of abuses, favouritism, incapacity, and gross negligence.

With such considerations personality cannot be entirely disconnected. You cannot denounce the abuse without condemning the perpetrator. The press seized this case with avidity, and used it as a confirmation of the doctrine it had been enforcing. It was an attack on the system of nepotism. The abstraction of practice from such a surgeon, they contended, would be the abstraction of the opportunity of doing mischief. They made the public good the plea for their severity. It furnished, too, a justification, as well as an argument for the propriety of some supervision, without which the lives of the poor would be sacrificed, ignorance and incapacity shielded that the privileged might recklessly and fearlessly imbrue their hands in human blood, and that tragedies might be enacted in the operating theatres without reproof, and with impunity.

In this operation he certainly was embarrassed—he lost his self-possession. His defects were in some degree exaggerated, and, too, in language that appeared virulent and cruel. The stone, for which he performed lithotomy, was unusually small and flat; the prostrate was preternaturally large, the middle lobe, or Home's, particularly so. All admitted it was a case of difficulty, but some affirmed that the surgeon did not possess the requisite ability to meet it.

Several "*Pures*" about this time were guilty of egregious and fatal mistakes, but they escaped with few exposures. Bransby Cooper had incited the *Lancet* to enmity by his open and avowed support of a rival journal brought forward by the "*Pures*," (who hated the light of a free press,) to run down the other. He was the life of the conspiracy to burke the expression of free opinion. The *Lancet* gratified a private pique, as well as obeyed a public principle, in attacking him. About the same period Lawrence performed a similar operation. The patient sunk from hæmorrhage, yet not one word was said of it. An *esprit de corps* actuated all the hospital surgeons. They felt that the delightful preserve, where a favored race was fattened and fed, with little exertion or merit, was being invaded, and that reporters or poachers were trespassing on a hitherto sacred soil. In their ardour they rushed into court to vindicate their colleague, and they proved too much. The trial was fraught with great public advantages; and the public testified the interest they felt in it by the applause with which they greeted the defendant at its conclusion.

It did much to shake the system of election to hospitals, and made it manifest that the tendency was to occasion a cruel and wanton augmentation of human misery, and that justice, humanity, and the interests of the medical world alike cried aloud for an alteration of such an unjust and obnoxious system. Since then we have seen him perform most of the capital operations in surgery with confidence, safety, and success. We would have no hesitation in submitting ourselves to be operated on by him if required. We fear, however, that the impression created on the public mind by the untoward event is not yet quite removed.

In justice to Mr. Cooper, we quote his observations made on this case in a clinique:—"We found that although no violence was inflicted during the operation, which he bore manfully, although no hæmorrhage occurred, although the cure proceeded apparently favourably from Tuesday to the Friday, although the post mortem examination displayed a free and fair incision, without the least damage to the surrounding parts, yet not the slightest attempt had been made by the constitution to repair the injury, the parts presenting precisely an appearance as if they had been divided an hour before the inspection of the body. The state of the kidneys afforded a further evidence of constitutional stony."

We have now to view Mr. Cooper in another light, that of author and biographer. As far as the former is concerned, when he confines himself to subjects purely professional he may pass muster; but in the latter capacity he has proved himself totally unfit for the task, in his Life of Sir Astley Cooper. If his uncle could revisit the pale glimpses of the moon, he would vent his honest indignation by knocking his hopeful nephew down for the discreditable and ridiculous light in which he presents him forth to the world. That Bransby could have had the folly of laying such a nonsensical publication before the British public surprises me. He has done more to injure the character and memory of the first of English surgeons, than the most ingenious malice could effect. It is merely a personal memoir, full of irrelevant and frequently indelicate matter, in which he introduces as *dramatis personæ* some of the most repulsive miscreants that could be found out of Newgate or Botany Bay. We are introduced at once to his respectable connections in early life. Murphy the resurrectionist, his colleagues, his stratagems, his robberies, his fights, regularly chronicled with his character and disposition. Crouch, another resurrectionist, his character and occupations abroad—Jack Harnett, Bill Harnett, Hollis, Butler. Their marriages, their end, duly recorded; all of which detestable descriptions he gives to show they were necessary connections to carry on his dissection, and supply his school with subjects.

We expected an analytic review or retrospect of his professional life, of his labours, the state of the art, and a comprehensive view of its progress throughout Europe before and during his career. We all know that men may be eminent as Sir Astley deservedly was, in a professional or public capacity, without being extradinary in the details of private life, or requiring two large octavo volumes for the delineation, in bald and disjointed chat, of every little minute and trivial act they said or did.

We have learnt from the book many traits of character that we were not aware Sir Astley possessed. We confess that commencing the work with every prepossession in favor of the baronet, as we progressed with the work, he lessened in our admiration, and at the conclusion he had fallen considerably in our estimation.

That he was a kind-hearted man, and clever, and much addicted to practical jokes and waggery; that he had a keen eye for the main chance; that he was not very forgetful of his own interest, and that he was willing to promote the good of others, provided they required only words and cost him nothing. All this spoke out in the first volume. Sir Astley Cooper entertained a great admiration of the struggles made by the French to overthrow the despotism of a long line of tyrants; and it further appears that his tendencies were decidedly democratic, and that in religion he was a free thinker. Bransby dolorously tells, and in his own simpering way, that his mother regretted that he did not feel as he ought for the royal sufferers, and for the aristocratic party: if she had lived to see her son a baronet, she would think that he had atoned for this want of sympathy for *poor*, obsolete, and fanatic royalty. Bransby says it is very remarkable when we reflect on the persons who at this period were assuming to themselves the leading place among the democrats, that Astley Cooper should not at once have been led to give up opinions that were advocated by such men. It is still stranger that he still continued to entertain the same opinions, not merely after his return from Paris, but till the last moment of his existence, opinions which Bransby—brought up, at that time when the mind takes its tone from those around him, in a guard room, in the confined circle of a mess-room, where fashion, frivolity, and blind and passive obedience are inculcated—very naturally labours in every instance to conceal. A few years before his death he made the following shrewd and general observation:—"A revolution may sometimes be a good thing for posterity, but never for the existing generation, for the change is always too sudden and too violent."

Bransby defines a Tory to be a man maintaining high constitutional principles, and always expressing the greatest respect for the monarch. Astley appeared animated with the loftiest enthusiasm for liberal constitutions, and the deepest detestation of despotism. He descanted with admiration on the glories of Greece and Rome. In youth it was natural, when the heart dances, and life is on the wing, before it learns craft, and to cloak its generous impulses, that he should so love to dwell upon those bright spots in the history of humanity!

These views were confirmed, strengthened, refined, exalted in converse with the highminded and intellectual Cline, and by being an eye-witness of the sacrifices and struggles of a gallant and chivalrous people to emancipate themselves from the iron rule of their task-masters, to assert the sovereignty of the people, and to elect, make laws, and depose those who govern them. In those opinions he never wavered; they grew with his growth; he arrived at a mature age, and was every day more convinced of their correctness. His sentiments were avowed and known. A Professorship becomes vacant, his principles the only impediment. Harrison laments the sad necessity. Astley at once decides to sacrifice his principles to his professional prospects. He is received with open arms. There is joy over the conversion of a sinner. As it were, to palliate his recreancy, he tells his nephew and the public the following story, which we cannot prepare our organs of deglutition to dispose of. Hobbes observes in his "Leviathan," that mysteries in religion are like pills, which, if you swallow, may do you a great deal of good, but if subjected to a process of mastication are very likely to be rejected by the stomach. This story, with every disposition to draw upon our credulity, has been too much for us. When the subject of the vacancy was on the tapis, he went with his friend Coleman to Epping Forest; when walking about there he suddenly felt a choking sensation about his throat, from which these pair of worthies argued that he would be hanged if he adhered to his political associates! A wise and philosophic inference. He returns. He repairs to Harrison. He informs him of the change, of the miraculous conversion. He is appointed Hospital Surgeon. And yet he was not a worldly man in the full sense of the term. He supports his character by leaving all his hard earnings away from his nephew Bransby, the most affectionate, the most devoted, the most amiable, the most talented of all his relations, to support an empty title, to incorporate his name with the aristocracy, which he affected to despise, and which he constantly sneered at and ridiculed.

The peculiar doctrines of John Hunter prepared the way, and insured the success of Sir Astley. His great merit was to appreciate and act upon them. His pre-eminent talent would have effected little without his untiring energy and industry. His best works are on hernia, dislocations, and fractures, and on the breast. If you wish to learn your profession, says he, look for yourself, never mind what people may say. It is not the number of cases that a surgeon has seen, it is the ready application which renders his knowledge of practical utility, and constitutes him an efficient surgeon. He made Hunter his model—he worked and thought for himself. One was a man of genius, the other a man of *talent*. Few men so much admired, so much courted for the graces of body and mind, would have had resolution to have devoted himself so unremittingly to scientific pursuits. He had a very low opinion of physicians, and very soundly rates them as a set of empirics, which opinion increases every day. He possessed a most intelligent and finely formed countenance; a person tall, commanding, symmetrical, muscular, elegant, without being corpulent. He moved with ease and dignity; his smile fascinating; an eye piercing, yet with a softness and good nature that won regard, and commanded homage wherever he directed it. He was a pattern of physical and moral perfection. Bransby assures us Sir Astley rose without envy, received honors, and the rewards of his labours, without incurring dislike, and died with the regret of all his professional brethren. There never was a man more popular, or, rather, more esteemed. One of his sayings we must give, "The medical profession will rise as others decline, from a strong and just and increasing sense of its utility."

Sir Astley's early education was neglected; his extra-professional knowledge was consequently very limited. In Edinburgh he wrote a paper denying the existence of matter. The President of the society replied, "Mr. Cooper has proved the falsehood of his doctrine, for there is much good matter in his paper." There was an astonishing precision in his glance, a certainty of touch, a surpassing steadiness in his manner, and his discriminative excellence was great. He could describe a pathological alteration still unrevealed to the eye in the tissues of an organ, as if he were actually looking at it, and the knife exposes the truth of his statement, and makes it evident to all. He detected a masked and obscure disease by the carriage of the patient as he approached. His diagnostic talent, or rather tact, was great. This is a natural gift, and not to be acquired.

Mr. B. Cooper's brief account of his relatives occupies just forty pages. There are, as may be perceived, a great deal of good materials, if lucidly and methodically arranged, to make a valuable publication. His selections from the diary of his uncle are in many respects singularly infelicitous. It is interspersed with many shrewd, sensible, if we might add, philosophical observations of Bransby himself, that satisfy the reader that he is a man of talent and of reading. Before we part with him we feel pleasure in acknowledging and holding up for imitation his behaviour in the wards, to pupils and to patients: it is most amiable. He is kind, soothing, and encouraging. No instance of irritability interrupts the suavity of his manner. He tries to alleviate the patients' sufferings; he smiles and sympathises with them as the case requires; he cracks his jokes, and enjoys a conversation, with its rejoinder from the poor Patlanders, whose blessings are loud and long for him. He is there a perfect personification of philanthropy. The gratitude of those committed to his care is the best measure of his amenity of demeanor to the sick. We speak of him now as he is, not as he was. He hath a tear for pity, and a hand open as day for melting charity.

Calloway, Addison, Bright, Babington, and Cock, in our next.

PROBE.

PARISIAN INTELLIGENCE.

(FROM OUR CORRESPONDENT.)

Paris, 21st Sept., 1843.

Professor TROUSSEAU, speaking of cynanche parotidœa, quotes several cases illustrative of its contagious character:—A poor woman, obliged to enter an hospital, left one of her children with a neighbour whose family were affected with this disorder. Shortly after her return the disease manifested itself, first on her son, and then on the mother; the former was brought to the *Hôpital Necker*, and placed in one of Professor Trousseau's wards, and communicated the malady to a child with whom he frequently played. In two boarding-schools, within the space of a fortnight, from twelve to fourteen children were taken ill; from one, two scholars were removed by their parents, and transmitted the disease to their brothers and sisters. 2nd of the Metastasis, which sometimes takes place, one in an adult 30 years old, the other in a young man of 18; in the former case it was an[illegible]nounced by the following symptoms—restlessness, shivering fits, feeble pulse, and a tendency to lepothymia. The metastasio in both cases took place in the testes.

M. CIVIALE has just published a memoir on the treatment that ought to be employed previous to performing lithrotity. Before operating, it is highly necessary to examine the state of the bladder, urethra, and prostate; to ascertain the position, size, number, and nature of the calculi; to enquire how the disorder declared itself, what were its symptoms, and whether any functional disorder exists; to blunt the sensibility of the mucous membrane of the urethra, by introducing at first every day, and then two or three times a day, a gum elastic bougie, leaving it in the urethra from five to ten minutes only, and increasing its size every third or fourth day; after some time the sound may be employed instead of the bougie. By this preparatory treatment, which lasts more or less according to the state of the parts, the accidents to which the introduction of the sound is liable to give rise (such as increased pain, dysuria, and hematuria), seldom take place, unless it be done suddenly and carelessly. In some cases the sensibility of the parts is so great, that the sound, when introduced, produces serious accidents, and even death; these, however, are exceptions to the general rule, and are becoming less frequent since operators are convinced of the necessity of preparing the patient. TREATMENT—In ordinary cases, the operation may be performed after submitting the patient to the use of the sound during four or five days; should the urethra and neck of the bladder be very irritable, it must be continued from four to five days longer. When any complication exists, such as catarrhus or atonia vesicæ, obstipatio, pica, cystitis, &c., the first thing to be done is to remove the complication, and then operate. The preparatory treatment, in most cases, is sufficient to destroy the strictures, if not, they must be divided.—Mr. CARMICHAEL, of Dublin, was the first who pointed out the efficacy of injecting the azotate of silver in blenorrhagia, at the dose of gr. 10 for 1 oz. of distilled water. This method was seldom employed in France, where that of Messrs. SERRES, of Montpellier, and RICORD, of Paris, is generally prescribed, the dose being only gr. ij. per oz.—Dr. DEBENEY has published a memoir, in which he states that he has employed Mr. CARMICHAEL's method successfully in all stages of the disease, and that he carried the dose to gr. 12, and grs. 14 per oz., without giving rise to any accidents. He distinguishes the cases:—1° Where the injections might be considered as abortive, having

been performed ere the inflammatory symptoms were developed. Out of 26 cases, 14 were cured by one caustic injection; 4 by 2 caustic injections, leaving between each an interval of twenty-four hours; 2 by 3 caustic injections, same interval; 2 by 3 caustic and afterwards astringent injections, during four days, these last formed by a concentrated solution of the acetate of lead; 1 by 2 caustic and afterwards astringent injections for four days; 2 by 3 caustic and afterwards astringent injections for four days; then, after an interval of four more, a fourth caustic injection, 1 in which 7 caustic injections were requisite. 2° When the injections were resolutive, and were employed in all stages of the disease. Out of 25 cases of blenorrhagia, having existed from five to fifteen days, 5 cured by 1 caustic injection: 5 by 2 caustic injections, with an interval between each of twenty-four hours; 4 by 3 caustic injections; 4 by 3 caustic and afterwards astringent injections, from three to four days; 5 by 3 caustic, then astringent injections, for three or four days, and finally a fourth caustic injection; 4 after 3 caustic, then astringent injections for three or four days, and after an interval of four days 2 caustic injections, with ten hours between each. Out of 13 cases of blenorrhagia, having lasted from fifteen to thirty days, and above, 2 cured by 1 caustic injection; 2 by 2 caustic injections, with an interval of twenty-four hours between each; 2 by 3 caustic, then astringent injections for four days; 3 by 3 caustic, then astringent injections for four days, and finally a fourth caustic injection—4 by 3 caustic, then astringent injections for four days; and after an interval of four more, two caustic injections. Besides these cases, there were seventeen others, which were lost sight of before the cure was completed, and two in which the injections produced no effect; which, however, may be added to the preceding ones to prove the harmlessness of the caustic injections. In order to ascertain its effect on a healthy organ the author injected on the 2nd of September, 1841, a solution of gr. + vj of azotate of silver in one dram of distilled water. The symptoms he observed were.—after twenty-five or thirty seconds, an excruciating pain was felt, which extended itself along the spermatic chord, and lasted with the same intensity for about five minutes, then began to decrease, and in an hour after was easily endured. During the night a white thick fluid flowed from the urethra; and at seven the next morning the urine was emitted with pain, and brought off the remains of white pellicles from the escar formed on the mucous membranes. At ten o'clock the secretion was slight, and the urine flowed freely; finally, at twelve o'clock, everything appeared to be in its natural state.

On the 1st of January, 1815, there were 82,748 foundlings in the different establishments devoted to these unfortunate beings; in the beginning of 1820 the number had increased to 101,858; in 1826, to 119,389; in 1830, to 118,485; in 1832, to 127,677. On the 1st January, 1841, it was reduced to 97,730, and the 31st December, 1841, to 98,277 on account of the new regulations adopted previous to their reception. The two departments which contain the greatest number of foundlings are the Seine (11,395, in 1815; 14,173, in 1841) and the Rhone (5,020, in 1815; 10,054, in 1841).

On the 1st of January, 1833, the different hospitals contained 99,262 patients; on the 1st January, 1838, 94,716; and on the 1st of Jan., 1841, 106,936. During this lapse of time (nine years) 3,553,460 patients were admitted, which may thus be divided according to the year, in round numbers—viz., 450,000, in 1836: 452,000, in 1837; 484,000, in 1838; 497,000, in 1839; 531,000, in 1840; and 567,000 in 1841; giving thus in six years an increase of 26 per cent. The mortality was still greater offering an augmentation of 40 per cent., it being in 1836 only 36,318, whereas it amounted to 45,332 in 1840, and 51,099 in 1841.

The hospitals of the department of the Seine contained on the 1st January, 1833, 13,737 patients, and on the 31st December, 1841, 15,583. The number of patients admitted were 79,492 in 1833, and after decreasing to 65 and 68,000 in the following years, increased to 76,000 in 1839; upwards of 81,800 in 1840, and reached 105,037 in 1841. The number of deaths were 72,867 during these nine years (7,092 in 1834, 8,940 in 1840, and 9,180 in 1841). In 1841 the number of patients received, compared with the population of Paris, is as 1 is to 10, and the deaths as 92 to 12,000.

A thermal spring has just been discovered at Rebenacq, near Gan (*Basses Pyrenées*), in a very singular manner. Several fishermen had remarked that when they came to a certain part of the river, the water appeared warmer than usual, so much so that they were in the habit of going there when chill. On examining the cause, it was discovered to be produced by a thermal spring which existed in the bed and under the water, of the Neez, at thirty paces from the high road which goes through the village.

The following case, addressed by Dr. E. Prestat to a periodical, is worthy of notice. Mrs. D., ætat 19, became pregnant in March 1841; at first she was so unwell as to be obliged to remain constantly in a recumbent position. Venesection having been performed, she was much better during the 6th, 7th, and 8th months, but about the middle of the 9th month the abdomen increased rapidly in size, but being in other respects quite well, she did not call in her medical attendant. After a sudden moral emotion, she was all at once seized with vertigo, and a weight in the head. Dr. Prestat's services were requested, who found, on examination, a considerable quantity of water collected in the peritoneum. Venesection was employed, with a tisan, to which was added a small quantity of nitras potassæ, and frictions on the abdomen with the tinctura digitalis. Under the influence of this treatment the cephalic symptoms disappeared, but the ascitis increased, and was accompanied with œdema of the lower extremities. The patient continued thus until the 21st December, when labour pains came on, and the delivery offered nothing particular, excepting the immense quantity of the amniotic liquid, which did not, however, seem to produce the slightest change in the size of the abdomen. The probable cause of the ascitis being the compression exercised by the uterus on the vena cava, it was rational to conclude that the cause being removed, the disease would disappear. Eventually the urine, by the administration of diuretics, flowed abundantly; the lochiæ likewise were aqueous; a bandage applied round the body rendered the absorption of the water more rapid, the mammæ did not increase in size as usual, nor did the milk fever take place. Mrs. D. recovered her former state of health, and since that period has been quite well.

M. Blondlet, of Nancy, has published a work on digestion, in which he treats principally of *gastric juice*. In order to obtain this liquid pure, he made, in a dog, an opening by which he could collect in the stomach, alimentary substances in the different stages of the digestive function, or gastric juice ad libitum: the animal, though he has been experimented upon for the last two years, does not appear to suffer in health, but eats and drinks heartily. Analysed, he found the gastric juice constantly acid, and this acidity was not produced by lactic or chlorhydric acids, but by a certain quantity of phosphate acid of lime. The acid principle is not however the chief cause of its action, this last being owing to the presence of a peculiar organic matter, which acts as a ferment, and as yet has not been isolated. In order to produce any effect, it must be combined with an acid, and be submitted to a certain temperature comprised between 54·50 and 122° F, above this last it loses all its powers. During digestion, the alimentary substances are not decomposed, nor do they undergo any new combination. Such substances as are soluble in water are dissolved in the stomach; the insoluble ones are merely softened in that organ through the influence of the gastric juice, so as to make a soft paste, composed of minute particles swimming in a liquid more or less abundant: after which they are absorbed, the soluble substances by the veins which transport them to the liver, and the insoluble by the chyliferous vessels, which, when mixed with the lymph contained in their interior, constitutes the chyle. As to the fœces they are formed 1° from the residue of the food which resisted the action of the gastric juice, and were not absorbed, and 2° by the different secretions which take place in the interior of the intestinal canal.

Academy of Sciences, *Sitting of the 18th Sept.*

M. Milne Edwards, read in his name and that of Mr. Dumas a notice on the formation of wax in the bee. Swammerdam, Maraldi, and Reaumur were of opinion that it was formed by the pollen of the flowers mixed with a secretio furnished by the bee. Huber, following the steps of Hunter, affirmed that it was formed by the insect from the sugar it collected in the flowers. In order to verify the correctness of these facts, the authors commenced a series of experiments, from which they conclude that the formation of wax is the result of a saccharine secretion, and that the opinion of Huber is exact.

Academy of Medicine, *Sitting of the 19th Sept.*

M. Emery read a report on a memoir of Dr. Faye on dysenteria. Struck with the insuccess attendant on the different remedies employed against this disorder, he was led to try the following prescription:—℞ Cortic querci rob virid ℈ iss. Fruct rosæ caninœ gr. xviij Puv. scillœ gr. iv. Pulv. epidend. vanell gr. j Pulv. amyli gr. xiv. The dose is from ℈ iiss to ℈ iv twice a day; if thrown up the dose must be decreased; it may be given notwithstanding the presence of fever, pain, and frequent stools. The diet consisted in light broth, fresh eggs, small pieces of bread and sugar, and as a drink wine and water or sugar and water. The conclusions were to write to the author to request he would continue his researches, making them known to the Academy, especially the *post mortem* examinations, and to deposit the memoir in the archives. After a discussion, in which *Messrs. Nacquart, Dubois d'Amiens, and Desportes* were heard, the conclusions were adopted.—M. Willaume read an observation of deviation of the uterus in a young lady of 20. Instead of that organ, a hard tumour is to be felt: the person has, notwithstanding, her menses regularly: M. Willaume being consulted as to whether it would be injurious to her to be married, replied that it would; *not because he considered conception impossible*, but because he thought the *delivery to be so.* Professor Velpeau did not agree with M. Willaume, and said that in all probability pregnancy would place the parts in their natural position.

Garland de Beaumont, D.M.P., B.L. & S.
Honorary Physician to the Spanish Embassy.

REVIEWS.

A Guide to the Urinary Cabinet; being Concise Directions for a Chemico-Pathological Examination of the Urine and Urinary Concretions, &c. By Robert Venables, A.M., M.B.—Knight and Sons.

This little book has been written to accompany a very useful collection of instruments and tests for urinary examinations.

To those who know how much we are assisted by the urinary excretion in attaining not only a knowledge of the morbid operations going on in the system, but even of the nature and extent of their influence on the tissues, no word need we say in recommending this little *brochure*, or its accompanying Cabinet: to others, we can only affirm, that if they avail themselves on our

recommendation of their advantages, they will not regret the circumstance of attending to our suggestion. The *chemical examination* of urinary deposits is so well described by Dr. Venables, that we shall put it entire before our readers.

"The next mode of examination is the chemical. By this method we determine the relative proportions of the constituents; and also whether the urine is vitiated by the presence of foreign principles. The first thing to be ascertained is, whether the urine presents any peculiar reagency of either an acidulous or an alkaline nature. This is best effected by immersing a small slip of litmus and turmeric paper into the urine. If it speedily and deeply reddens the litmus, the urine is acidulous; but if it reddens turmeric, the urine is strongly alkaline. These reactions are of very great importance, as frequently indicating a tendency to particular kinds of stone or gravel, or as denoting peculiar organic affections of the bladder.

"We shall now take the principles in order. The normal quantity of water is to be determined by the quantity passed in a given time, and the sp. gr. If not more than forty ounces of the usual sp. gr. be passed in twenty-four hours, we may conclude the watery portion to be in the normal proportion; and deviations from the above will be readily understood from what has been already stated.

"*Urea.*—The normal proportion of this principle is about thirty-and-a-half parts in one thousand parts of urine. But this principle may be unnaturally increased or diminished. When in the normal proportion, no crystallization takes place on the addition of nitric acid, even after a considerable interval; but when urea is in excess, crystallization takes place very speedily after the addition of nitric acid; and the interval between the addition and the crystallization may be taken as a tolerably fair index of the excess of urea. To examine for this principle, a small quantity of urine should be placed in one of the glass capsules, and with the dropping tube nearly an equal quantity of nitric acid should be allowed to trickle along the concave surface of the capsule, so as to pass under and float the urine upon its surface. If urea be present in excess, crystallization will take place more or less speedily, in proportion to the excess. Urine abounding in urea, has generally a high sp. gr. from 1·020 to 1·030. Hence, the sp. gr. is frequently an indication of an excess of urea.

"Urea may be deficient, and this is frequently associated with the presence of foreign matters, especially sugar, in the urine. If the watery portion of the urine be increased, the quantity of urea, as well as of the other principles, will be relatively, not positively, reduced. Such cases will be readily distinguished by the reduced sp. gr. and increased quantity of the urine. The best method of estimating a real deficiency of urea, is either to evaporate the urine at a gentle heat to one-half or two-thirds, then, the quantity of water being reduced, if no crystallization takes place on the addition of nitric acid, urea may be considered as deficient.

"*Lactic acid* exists in the urine generally in combination with ammonia; but when the urine abounds in other acidulous principles, the actic acid being separated from its base, attacks the lithic compounds, and, combining with the base, sets the lithic acid free. It may thus become a cause of lithic acid gravel, or of the formation of a lithic acid calculus.

"There are various ways of obtaining lactic acid, but they involve complex chemical details, wholly inapplicable to ordinary investigation. Dr. Prout considers urea and lactic acid as derived principally from the gelatinous tissues; hence he says their examination 'will often furnish a clue to diseased operations, which would be sought for in vain through any other channel.'

"*Lithic Acid* exists always in healthy urine, in combination with ammonia, by which it is held in solution. Its affinities are so weak that it is separated by every other, even the carbonic acid. Hence, if any dilute acid be added even to healthy urine, the lithic acid separates mostly in the crystallized form. An acidulous (naturally) state of the urine may be frequently determined by allowing it to remain quiescent for a time, when the lithic acid will separate in the crystallized form by the natural reagency of its own acidulous principles. This is a formidable state of things.

"Lithic acid sometimes abounds to a great extent in the urine, but so combined as to be held in solution. Notwithstanding the very great insolubility of lithic acid — requiring nearly 10,000 parts of water for solution—the lithate of ammonia is comparatively very soluble. Lithate of ammonia also is much more soluble in hot than in cold menstruums. Hence urine surcharged with lithate of ammonia will preserve its transparency while hot—the lithate being completely soluble at this temperature, but become turbid on cooling, owing to the lithate becoming insoluble, and, consequently, separating. We recognise therefore the alkaline lithates by this peculiar property. The urine when first passed is perfectly transparent, and free from cloud or sediment. As it cools it becomes cloudy, and ultimately the precipitated lithate of ammonia subsides, leaving the urine clear and cloudless above. A portion of the urine agitated so as to diffuse and suspend the lithate, heated in the capsule, over the spirit-lamp, gradually becomes transparent, and the whole of the salt is dissolved, separating again as the urine cools. Further, the lithic acid may be verified by the means to be detailed under the head of lithic acid gravel, or calculi. Indeed the lithic acid may be separated in its characteristic form by the addition of any dilute acid at the temperature of solution. The above properties will distinguish these sediments from the phosphates which sometimes subside from diffusion through the urine.

"Urine abounding in lithic acid is mostly scanty, high-coloured, and of considerable sp. gr. It is in general associated with the phlogistic diathesis, or inflammatory state of the system. Hence, bleeding, mercurials, and other antiphlogistics are indicated in such cases, but such considerations are foreign to the objects of this summary.

"The lithates are deposited under three different aspects, namely yellow, or cream-coloured, the red, and the pink. Dr. Prout looks upon the lithic compounds as derived from the albuminous principles of the chyle and blood, as well as from the decomposition of the albuminous textures themselves. Hence, a knowledge of their nature, independently of the information they afford relative to the diseased states of the urine, frequently throws considerable light upon the derangements of the digestive process, and their specific nature.

"*Mucus.*—The bladder and urinary organs are lined, like many others, with a peculiar membrane named mucous, and which secretes a peculiar principle, termed mucus, which serves to protect the part from the irritant action of the fluids either contained or transmitted. This mucus in the healthy state is so small in quantity, that it has little or no effect upon the appearance of the urine. After rest, however, it is often observed to have subsided, either occupying the bottom of the vessel, or remaining suspended as a mass at different depths. It is not an object of any importance unless it have become excessive in quantity, or vitiated in quality—circumstances to be noted hereafter.

"*Epithelium.*—The structure of the mucous membrane consists of an interlacement of fibres, on which, in some parts, a layer of very minute perpendicular cylinders rest, and in which the numerous mucous follicles are seated. The mucous membrane of the urinary, as well as some other passages, are covered by an *epithelium*, the minute portions of which are arranged side by side, somewhat like a pavement. The particles, each of which contains a nucleus, are constantly separating and thrown off. They have the appearance of thin scales. The mucous lining of the urethra is furnished with an epithelium, which is incessantly throwing off these minuter scales, or squamulæ, nor are they difficult to distinguish with the assistance of the microscope. Vigla has seen them in great abundance; they are small and roundish, but still not regular; in the middle, or sometimes at the sides, they appear dark, and mostly somewhat elevated. Under ordinary circumstances, and in the healthy state, there is nothing very remarkable in the epithelium; but in certain cases of irritation of the mucous lining, they are thrown off in such large quantity, that subsiding, soon after voiding the urine, in extraordinary abundance, they are commonly mistaken for the mucous cloud, in large excess, of healthy urine. Thus we may often detect irritation, or at least a state approaching to irritation, in the mucous membrane, by examining the cloudy deposit long before it is indicated by the ordinary symptoms.

"The next order of principles are of the mineral character, and comprehend the alkaline and earthy salts; and, first, of the alkalies. The two fixed alkalies are mostly combined with the sulphuric, or phosphoric acids, and chlorine. They may be either in excess or deficient, and in consequence give rise to peculiar diseases.

"*Potass*—Is stated by Berzelius to exist in the urine, as sulphate, in the ratio of 3·71 to 1000. Potass and soda both when in excess, however, appear to exist rather as carbonates; for the urine in which they so exist effervesces, giving off carbonic acid, by mere agitation, by heat, but especially on the addition of any of the stronger acids, as the acetic, hydro-chloric, &c., diluted.

"*Sodium*—Exists in still greater proportion, both as phosphate of soda and chloride of sodium, the ratio being $2{\cdot}94+4{\cdot}45=7{\cdot}39:1000$. To determine the excess of the two fixed alkalies, the best plan is to convert them into *chlorides*, by a solution of neutral chloride of barium. Insoluble salts of baryta will be formed, from which the alkaline chlorides may be separated by mere decanting or filtration. On concentrating the solution, the potass may be precipitated by excess of tartaric acid, and its quantity be thus estimated. The chloride of sodium may be obtained by subsequent evaporation.

When greater accuracy is necessary, the compound solution of the mixed chlorides may be evaporated, and then exposed to the action of spirits of wine containing about 60 per cent. of alcohol. The chloride of sodium will be dissolved out, and its quantity estimated by evaporation; the chloride of potassium may be dissolved and precipitated by tartaric acid as before.

"In estimating the excess of constituents, volumes may be made to represent weights, by processes easily understood; but as such minute precision is seldom necessary in a pathological point of view, morbid excess can be readily determined by the evidence of the senses upon the products from any given volume.

"*Ammonia*—Exists naturally in the urine in combination with phosphoric, and also with hydrochloric acid. The proportions 3·15 : 1000. Sometimes, however, its quantity is morbidly increased, and it enters into the formation of some species of calculi. It also is found as carbonate, derived, in fact, from the decomposition of urea, which is readily converted into carbonate of ammonia, by the fixed alkalies, which are found in diseased mucus.

"Alkaline urine generally indicates a tendency to deposit the phosphates, which it does by neutralising the excess of phosphoric acid by which the earths are rendered soluble. It also indicates frequently a diseased condition of bladder, at least of its mucous coat. When a large quantity of mucus is secreted, and this vitiated in quality, the urine is often highly alkaline when voided, turning turmeric deeply brown; but should it not be so, or only neutral, it very speedily becomes alkaline, exhales a

strong ammoniacal odour, and very soon becomes putrid. The sp. gr. of such urine is also very various. The urine is often very abundant; opalescent, or sometimes clear, like water. In some cases the sp. gr. hardly exceeds that of distilled water; in other cases it amounts to 1·020 or 1·030. Such conditions, generally speaking, contra-indicate the use of mercury.

"*Lime*—Forms a constituent of healthy urine, in which it is held in solution, not only by phosphoric acid in excess, but still farther by the alkaline chlorides and carbonates, and hydro-chlorate of ammonia. The normal proportion of phosphate is one part in 1000. Sometimes, however, the phosphate of lime is much increased, or at least the earthy base, when it is found also in combination with other acids, especially the oxalic. Phosphate of lime often forms prostatic concretions, and is also occasionally thrown off, together with the carbonate, from the mucous coating of the bladder.

"The quantity of lime in solution may be rendered evident by adding to a portion of the urine a little acetic acid, and afterwards the oxalate of ammonia. The oxalic acid will precipitate the lime as oxalate of lime, and the proportion may be thus readily inferred, by comparing the bulk of the precipitate with the volume of urine used. The addition of acetic acid previously precipitates any lithic acid, if it exist, and the oxalate of ammonia should be added to the decanted or filtered portions. The oxalate of lime precipitates as a white flocculent powder, which by boiling becomes heavy and granular.

"*Magnesia*—When present, precipitates with the oxalic acid as oxalate of magnesia; but if there be much hydro-chlorate of ammonia in the solution, the magnesia will not precipitate, because it is soluble in hydro-chlorate of ammonia. We therefore filter from the oxalate of lime and precipitate the filtered liquor by carbonate of potass and boiling; carbonate of magnesia will be formed, and will precipitate. These precipitates may be ignited, and the quantity of pure earths thus accurately ascertained; but it is seldom necessary, for practical purposes, to proceed so far.

"Tolerably fair estimates of the quantity of earthy bases may be more hastily effected, by adding liquor potassæ, which will precipitate them as neutral phosphates; or if liquor ammoniæ be added, the ammonia, or the mixed and fusible-phosphates, will be thrown down, which, fused before the blow-pipe, will by the weight of the bead compared with the volume of urine from which it was obtained, enable us to judge with quite enough precision of the quantity of the earthy bases present in the specimen.

"*Acids.*—With respect to the mineral acids naturally existing in the urine, they are so neutralised or combined, that they can exert no chemical re-agency upon the other urinary constituents; but should they be secreted in excess, they will give rise to decompositions, and the consequent formation of new and dangerous products. The excess of the stronger acids act by depriving the weaker of their bases, and combining with them themselves. Thus, for instance, we may suppose the hydro-chloric to liberate the lactic, and by taking from it its base, the lactic thus separated in its turn exerts the agency of a free acid, and depriving the lithic of its base, sets it free; and this last thus set free being very insoluble, either assumes the crystalline form, is expelled as gravel, or forms a nucleus for future depositions. The sulphuric and hydro-chloric acids are very easily estimated, because they form compounds, which are insoluble, and their weights are easily ascertained.

"*Hydro-chloric Acid*—Exists combined with ammonia in the proportion of 1·5 of the salt to 1000 of urine. We also find 4·45 of chloride of sodium in the same quantity, making altogether 5·95, or nearly six parts of the saline compounds of chlorine in 1000 parts of urine. To separate the hydro-chloric acid, all that is necessary is to add nitrate of silver, when we shall precipitate the hydro-chloric acid as an insoluble chloride. To insure complete accuracy, however, some precautions are necessary. If the urine be alkaline, especially ammoniacal—acetic, or perhaps preferably nitric, acid in slight excess should be added; otherwise the ammonia would hold the chloride in solution. A little organic matter is precipitated by the oxide of silver, but this is easily got rid of by heating in a Berlin crucible, and treating the residue with a little nitric acid, and washing in distilled water. The insoluble residue will be chloride of silver.

"*Sulphuric Acid*—May be precipitated by acidulous nitrate of baryta; an insoluble sulphate of the earth will fall down, which may be washed with diluted nitric acid, and afterwards exposed to heat. The weight of the dried mass will afford the means of determining the precise quantity of sulphuric acid.

"The acids are of importance, inasmuch as, if free, they cause a liberation of lithic acid, and indeed a predominance of some of the acids indicate particular diatheses. Thus the predominance of the *muriatic acid* seems in general to denote a *phlogistic* or *inflammatory* state of system, while that of the *lactic* marks rather a state of *irritation*.

"Acidulous urine, with a tendency to deposit lithic acid, is known by its peculiar effect upon litmus paper, being also perfectly transparent and free from cloud or sediment, of a bright copper colour, and after a time it deposits lithic acid in the crystalline form. The sp. gr. is mostly high, above 1·020.

"*Foreign Principles*—Principally consist of organic matters, and they may be considered in the order of enumeration.

"*Blood*—Itself as a whole requires little or no comment; it will be easily recognized by its sensible characters.

"*Albumen*—Is sometimes in considerable quantity, in the urine, insomuch that on being heated it forms almost a solid opaque mass. The addition of nitric acid likewise causes coagulation, especially if assisted by the application of heat. But urine abounding in chyle also coagulates under similar circumstances. When the urine contains coagulable matter in small quantity, the best test is the prussiate of the ferro-sesquicyanide of potassium. The urine should be rendered slightly acidulous by a drop or two of acetic acid, and the solution of the prussiate then added. If the urine contain either serum or chyle, a cloud more or less dense and opaque will speedily form and gradually subside.

"Serum and chyle seem to coagulate with different degrees of density. When albumen is the coagulable matter, the mass is more solid and tough, whereas chyle affords a more curdy, light, and, as it were, flocculent precipitate.

"An albuminous state frequently prevails after some of the exanthemata, especially scarlet fever. It also prevails in some forms of dropsy, and denotes granular degeneration of the kidneys. Indeed chylo-albuminous urine is of great moment, inasmuch as, denoting certain morbid states of the kidney, which it is of importance to recognize.

"*Fibrin*, *Xanthic*, and *Cystic* oxides, will be considered under the head of calculous concretions. Fibrin sometimes is passed by the kidneys, and moulded in the ureters, so as to assume the appearance of small threads.

"*Nitric* acid is not of special importance.

"*Sugar*—Is a principle found in certain diseased states of urine, and especially in diabetes, to which condition the term should be confined. Sugar, when in large proportion, is known by the sweet taste which it gives to the urine. The sp. gr. of saccharine urine is for the most part high; above 1·030.

"When sugar is in very small quantity, or that its sensible properties—the sweet taste, for instance—are masked by other matters, then some manipulation becomes necessary to determine the presence or absence of this principle. The urine may be evaporated to dryness, and the extract hardened by continued desiccation. The hard mass treated first with cold alcohol, and afterwards with boiling, which last dissolves the sugar, on evaporation will yield solid sugar.

"Diabetic urine also undergoes vinous fermentation; if, therefore, a little yeast be added to diabetic urine, and the temperature favourable, carbonic acid may be disengaged, and alcohol may be distilled or obtained by other well known processes from the residue.

"Runge proposes the following, as both precise and delicate. The suspected urine is to be evaporated at a very moderate heat to dryness; upon the dry residue, in a porcelain dish or plate, drop sulphuric acid diluted with from six to eight parts of water. If sugar be present the mass acquires a dark or even black colour. Previously, however, it will be proper to free the specimen by adding a solution of acetate of lead, filtering and precipitating the excess of lead by hydro-sulphuric acid gas, and then boiling. The sulphuric acid may now be applied as above directed with much greater certainty.

"The carbon of sugar may be very readily and directly changed into oxalic acid by the action of permanganate of potass. If, for instance, we act upon an equivalent of sugar by six of permanganate of potass, we shall obtain twelve of peroxide of maganese, nine of water, and six of oxalate of potass. Thus one of sugar $= C_{12}\,H_9\,O_9$ and $6\,(Mn_2\,O_7 + K\,O) = 12\,(Mn\,O^2) + 9\,H\,O + 6\,(C_2\,O_3 + K\,O)$. The oxalic acid may afterwards be separated by a soluble salt of lime. I have not yet examined it sufficiently to pronounce upon the applicability or its merits.

"*Oxalic acid* has not been found dissolved in the urine; and indeed this is consistent with its known reagencies, as it would be precipitated by the lime found in healthy urine. In certain morbid states of system oxalic acid is formed, and uniting with lime gives rise to those urinary concretions named "mulberry calculi." It will be unnecessary to consider this principle at present, as we shall have to detail the characters of the oxalate of lime calculus at a future period.

"It may, however, be observed here, that Dr. Bird has lately announced that he has discovered oxalate of lime in very minute division in urine, and considers such urine as characterising certain forms of dyspeptic disease. The oxalate is discoverable principally by microscopic observation.

"*Carbonic Acid.*—This acid is often found in the urine, both in excess and in combination with the alkalies. It is readily disengaged, either by heating the urine or by adding a stronger acid. It may be separated, and received over water or mercury. By its excess it often holds the otherwise insoluble salts of lime in solution; and hence such urine becomes turbid on being heated, in consequence of the escape of the carbonic acid, and the deposition of the carbonate and phosphate of lime, &c., which it held in solution. This acid also enters into combination with the lime, forming solid urinary concretions of the carbonate of this earth.

"*Pus.*—The bladder naturally secretes mucus, but in certain diseased states this mucus becomes not only increased in quantity, but vitiated and greatly deteriorated in quality. There appears to be a great difficulty in distinguishing pus from diseased mucus. The globules of pus are said to be surrounded by an oleaginous envelope soluble in ether; therefore ether digested on pus globules becomes charged with this oily matter, but receives no such impregnation from digestion on mucus. This I believe to be generally correct.

"*Bile.*—Urine, in certain cases of hepatic derangement, contains bile. This principle is detected by hydrochloric, but still better by nitric acid, which strikes a green colour with biliary urine. Such urine is generally at first of a deep orange-red colour, and prevails much in jaundice.

"OF CALCULI.

"The constituents of calculi appear under three varieties of form—namely, the pulverulent or amorphous, the crystalline, and the aggregated masses. For a complete history of these

and their pathology, I must refer to Dr. Prout's excellent work.

"If a portion of calculus or any other form of its constitution be examined chemically, it will give the same indications; consequently, what applies to one mode, will apply equally to all other forms and varieties of the same chemical constituents. The different calculi have been enumerated under the following species:—

"1. Lithic acid calculus.
"2. Lithate of ammonia.
"3. Oxalate of lime.
"4. Carbonate of lime.
"5. Phosphate of lime, or bone earth calculus.
"6. Ammonia phosphate of magnesia, or triple calculus.
"7. Mixed phosphates, or fusible, consisting of a mixture of 5 and 6.
"8. Alternating calculus—the different constituents alternating in layers.
"9. Mixed calculus, all the constituents confusedly intermixed.
"10. Cystic oxide.
"11. Xanthic (lithic) oxide.
"12. Fibrinous calculus.
"13. Prostatic calculus.

"*Lithic acid* is mostly of a reddish brown or fawn colour, approaching somewhat to that of mahogany; surface sometimes finely tuberculated; internally presents concentric laminæ; fracture either imperfectly crystalline or amorphous, and sometimes earthy. Heated before the blowpipe in the platinum forceps or on charcoal, it blackens, emitting a peculiar animal odour, and ultimately dissipates, leaving a minute quantity of a white ash, which is *alkaline*, reddening moistened tumeric paper. It is completely soluble in caustic potass—any insoluble matter being an impurity—from which it may be precipitated as a white granular, or sometimes gelatinous mass, on the addition of a little hydrochloric acid. A small fragment placed in a capsule, with a little nitric acid, dissolves with effervescence; on evaporation, the solution assumes a pink or carmine colour, which is immediately converted, by a drop or two of ammonia, to a purple; the purpurate of ammonia of Prout—the muroxide of Liebig.

"*Lithate of ammonia* forms the sediments which appear in the urine of persons suffering from dyspeptic affections, after it has cooled. It also forms the principal part of the lateritious and febrile sediments: being insoluble in the cold urine, it separates as the urine cools, and is re-dissolved on heating. When aggregated into a calculous massl it is mostly of a slate or clay colour; surface sometimes smooth, sometimes tuberculated; internal structure concentric; fracture very fine, earthy, resembling compact limestone—much more soluble than pure lithic acid. It is rather uncommon; of small size, and mostly confined to children under puberty. It is often found intermixed with oxalate of lime. Heated before the blowpipe it crackles or decrepitates strongly: heated with potass, it gives off the smell of ammonia. It is soluble in the carbonated alkalies (which the lithic acid is not), carbonate of ammonia and lithate of potass resulting from double decomposition.

"*Oxalate of lime or mulberry calculus*:—usually of a dark brown colour or even black, and a rough tuberculated appearance like the mulberry: very hard and compact, and internally imperfectly laminated. It seldom surpasses the medium size, and is by no means uncommon. There is a variety dark in colour, smooth, and small, resembling hemp-seed, from which they have been named *hemp-seed* calculi. These are frequently intermixed with lithate of ammonia in very variable proportion.

"Before the blowpipe, this calculus first blackens, then swells and expands into a kind of white efflorescence. If the heat be urged, caustic or quick-lime is the only residue which reddens turmeric, and precipitates a solution of oxalic acid. It is soluble in hydrochloric and nitric acids and precipitable without change by an alkali. It is soluble in all the organic acids, even the acetic. To separate the acid, the oxalate, reduced to powder, should be well boiled with a solution of carbonate of potass: an exchange of principles is thus effected, and the filtered portion will contain *oxalate of potass*, and the oxalic acid may be identified by chloride of calcium, sulphate of copper, and nitrate of silver. The oxalate of silver from this last, on being dried and gently heated, detonates freely.

"*Carbonate of lime.*—Before the blowpipe they become caustic, and the residue precipitates oxalic acid. They dissolve with effervescence in the acetic, hydrochloric, or nitric acids, with the escape of carbonic acid gas. Calculi of this sort are very rare.

"*Phosphate of lime*, though often forming a part of calculi, is very seldom found the exclusive constituent. The surface is of a pale brown, and so smooth as to appear polished; internally they are regularly laminated, and the laminæ adhere so slightly as to separate with ease into concentric crusts. They are striated in a direction perpendicular to the surface.

"Before the blowpipe they blacken from the charring of the animal matter, and on continuing the heat, they become white again, and resist all further action of the blowpipe; unless the heat be most intense, and which but few persons can raise, when it at last melts. This susceptibility of fusion distinguishes the earthy phosphate of calculi from that in bone, the latter containing more lime in its composition. The ash which remains has no re-action, either acid or alkaline. This last will distinguish the ash from those of the oxalate and carbonate above mentioned. It is dissolved by the acids—hydrochloric and nitric—and reprecipitable by caustic ammonia without decomposition, as white powder not crystalline. It may be decomposed by boiling with carbonate of potass, as noticed in respect to oxalate of lime.

"*Ammonio-phosphate of magnesia, or triple calculus*, is mostly of a white colour; surface uneven, covered with minute shining crystals. It is easily broken and pulverised. Sometimes, however, very hard and compact, and, if broken, exhibiting a crystalline texture.

"Before the blowpipe it becomes first discoloured and then gives off ammonia, much more powerfully if a little potass or soda be previously added. The fragment diminishes in size, and ultimately melts. The fused mass consists of magnesia, with excess of phosphoric acid, the ammonia being driven off. Heated in solution of caustic potass it gives off ammonia. It is easily dissolved by diluted hydrochloric and other acids, and may be precipitated, as a crystalline powder, on the addition of caustic ammonia.

"*Mixed phosphates, or fusible calculus.*—This variety consists of a mixture of the two preceding. It is white, and more friable than any of the other species, resembling a mass of chalk. This calculus occurs frequently, and often forms an external coating, enveloping lithic calculi.

"Before the blowpipe it melts with great ease, whence it is named 'fusible.' Dissolved in a dilute acid, on adding oxalic acid, oxalate of lime precipitates; and by heating the residual liquor with an alkali in neutralising proportion, the ammonio-magnesian phosphate separates as a crystalline deposit. The alternating and mixed calculi require no specific observations. Their constitution is to be determined by the due application of the different modes of analysis already pointed out.

"*Cystic oxide* in many points resembles in appearance the triple calculus; it is, however, more compact, not laminated, but confusedly crystallized throughout its substance. They exhibit a kind of yellowish transparency, with a peculiar glistening lustre, like a body of very high refractive density. Their consistency is about that of wax, and from a similarity of hardness they affect the saw as wax would. It is often studded externally with crystals of the triple calculus.

"Before the blowpipe it gives off a peculiar, but indescribable odour, quite different from that of lithic acid, and leaves a whitish ash, which is not alkaline. However, its characteristic properties are solubility in both acids and alkalies. Thus if dissolved in either an acid or an alkali, on the addition of the opposite reagent in neutralising proportion, it is precipitated in small yellowish crystalline plates, or granules. The acetic, citric, and tartaric acids, however, as also the sesquicarbonate of ammonia, do not dissolve it, but on the contrary, precipitate it.

"This calculus has been lately discovered to contain sulphur; by heat it is decomposed, and evolves sulphurous acid and ammonia. The formula for its constitution is $NC_6\ H_6\ O_4\ S_2$, that is 1 of nitrogen, 6 of carbon, 6 of hydrogen, 4 of oxygen, and 2 of sulphur. This peculiarity of composition, and its containing sulphur, Dr. Prout considers as denoting its origin as resulting from an imperfect assimilation of the albuminous principle, or more probably from the subsequent action of the kidney, on the such imperfectly developed albumen.

"*Xanthic oxide* is very rare, although I think it frequently predominates in lithic concretions. It is mostly of a cinnamon colour; surface smooth; texture hard; compact; laminated; and the colour deepened by an alkali.

"Before the blowpipe, it crackles, blackens, splits into scaly fragments, giving off a peculiar feeble animal odour, leaving a minute white ash. It dissolves in the nitric and sulphuric acids, but not in the hydro-chloric, or oxalic. It dissolves also in the caustic alkalies. On evaporating the solution in nitric acid, a bright brown yellow residue remained, whence the characteristic epithet '*xanthic*.' On analysis, its composition was found to differ from lithic only in yielding less of oxygen. The formula of these two are as follows:

	N	C	H	O
Lithic acid . . .	4	10	4	6
Xanthic oxide . .	4	10	4	4

"Hence the proposed name, '*lithic*' or '*uric*' oxide.

"*Fibrinous calculus.*—Yellowish brown colour, like wax, and of the same consistence; texture fibrous, not stratified. On applying the flame of the spirit lamp, it takes fire, burns, swells, and blackens, ultimately passing into a carbonaceous ash. During combustion an animal odour exhales, different however from any of those before noticed. Its leading characters are solubility by digestion in diluted acetic acid; on adding a solution of ferrocyanide of potassium a yellow precipitate fallr down.

"*Prostatic calculi* in some cases so closely resemble lithic in appearance, that they can be distinguished only by their composition. They consist of phosphate of lime mixed with the secretion of the gland, and therefore the blowpipe will soon determine their nature.

"*Siliceous gravel.*—Silex has been found, in some cases, forming small granular masses. Acted on by nitric acid, or the alkalies, they are not affected. Heated with a little carbonate of soda before the blowpipe, they readily melt into a glass.

"In many cases, especially in certain forms of rheumatism, and in some arthritic or gouty affections, lithic acid is formed in great abundance, and separates from the urine, as it cools, in the form of lithate of ammonia. It is also frequently deposited in the joints, and in the sheaths of the tendons. These gouty concretions have been long known under the name of chalk stones. They, however, consist principally of lithic acid and soda—lithate of soda. That the base is alkaline, may be shewn by mixing the concretion with a small portion of finely divided silex, and heating before the blowpipe, when a bead of glass will be formed. The nature of the alkali may be verified, by heating before the blowpipe, then fusing the mass upon a platinum wire. Soda will give a yellow tinge to the flame, while potass produces a violet.

"There are various other concretions met with from different organs in the human body, but a lengthened account of them would be

foreign to the objects of this summary. Biliary concretions consist principally of cholesterine, or of the inspissated colouring matter of the bile. In some diseases the colouring matter accumulates so as to form solid masses. Its solution in caustic potass is of a clear yellow colour. It absorbs oxygen, becoming green. If, therefore, its solution be treated with nitric acid in excess, it is oxydised, and becomes a deep green. It is thus that bile may be detected in the serum of the blood, in the skin, the eyes, and, as been remarked already, in the urine of persons labouring under jaundice. If the nitric acid be not added in too great quantity at once, the yellow-coloured liquor undergoes a variety of changes very rapidly, even in a few seconds, passing into green, then blue, afterwards violet, and finally red. After a short interval, this last also disappears, the solution becomes yellow, and the colouring matter is completely decomposed. The colouring matter is precipitated also, from its solution in potass, in flocculi of a deep green colour, by hydro-chloric acid. These flocculi, treated with nitric acid, undergo the changes above noted, and are soluble in caustic, potass, and ammonia, with a rich emerald green colour. For the properties of cholesterine, of which biliary concretions mostly consist, I refer to the works upon organic chemistry.

"Having thus detailed the general properties of healthy and diseased urine, it only remains to offer a few observations upon the mode of conducting analyses, and to address them principally to the inexperienced in those matters.

"The first object should be to become acquainted with the general appearance and properties of healthy urine, and the reagencies produced by the different tests, because, when familiar with properties belonging to health, disease is instantly recognised.

"Urine which has a *yellow* or deep orange-red colour, indicates a mal-distribution of the bile, and denotes a tendency to, if not actual jaundice. *Copper*-coloured urine, which is, or becomes remarkably transparent on cooling, indicates acidity of this excretion, and a tendency to deposit *lithic* acid in the crystallised form. *Citron*-coloured, or *yellowish*-green coloured, remarkably transparent, with an acidulous reaction, denotes the oxalate of lime diathesis. *Pale straw*-coloured urine, or of a *blueish-green* tint, and having *the smell of new hay*, denotes sugar, and the presence of diabetes in some one or other of its forms. *Opalescent oily-looking* urine, having a peculiar animal odour, also resembling that of the sweet or *wild briar*, denotes the *cystic oxide* diathesis. *Pale-coloured*, *wheyish-looking* urine *opalescent*, when passed, and having a strong, peculiar urinous smell, is generally *neutral*, and soon becomes *alkaline*; it denotes a tendency to the *phosphates*. Very *clear colourless transparent* urine, devoid of *smell* and almost of *taste*, is generally copious, watery, and of very low sp. gr.; shows a tendency to hysteria, and various other nervous affections, as well as spasm. Urine of this sort also often contains a large proportion of the alkalies, mostly carbonated. Urine perfectly *transparent* when *passed*, but becoming *cloudy* as it *cools*, and finally depositing *reddish*, *yellow*, *cream-coloured* sediments, shows a predominance of *lithate of ammonia*, and the sediment will readily dissolve on the application of heat. Urine *cloudy when passed*, and remaining so after *filtration*, but on being heated after the addition of a little *acetic acid*, becomes *opaque*, and deposits a *solid coagulum*, contains albumen in some one or other of its modifications. Urine transparent when warm, but which on cooling deposits a sediment, and being heated becomes again transparent, but on continuing the heat becomes cloudy, and ultimately deposits a coagulum, owes these properties to lithate of ammonia in excess, with albumen. A very slight degree of temperature dissolves the lithate, but it requires a temperature of between 150° or 160° Fah. to coagulate the albumen; the double opalescence, with intervening transparency, arising from the different degrees of temperature. Transparent urine, becoming cloudy on the application of heat will be found to owe that property to holding the phosphates, and probably some carbonate of lime, in solution by carbonic acid in large excess.

"The quantity of urine passed in a given time should be attended to, for although of itself or abstractedly it may lead to no particular inferences, yet in connection with other circumstances quantity forms an object of no small moment. This matter, however, belongs entirely to the patient's observance.

"Having examined the sensible, the pathologist next proceeds to the mechanical, properties—namely, the sp. gr.; and this is often quite sufficient to lead to very important information. By immersing the urinometer, and allowing it to remain at rest for a few seconds, the sp. gr. is at once read off by mere inspection of the figures on the stem. The following precautions, however, are essential to accuracy and precision. The instrument should be perfectly *clean*, and free from all *grease*, *oily*, *mucilaginous*, *saccharine*, and saline particles, the adhesion of which affect the delicacy of the instrument. The urine, too, should be free from all *bubbles of air*, which, by attaching themselves to the instrument, would give it a greater degree of buoyancy, and consequently a false estimate. The temperature also should be taken, and this should be allowed to approach the ordinary standard, say between 50° and 60°, before the sp. gr. be finally determined. Urine below 1·010, very copious, clear, and like spring water, infers defective digestion, attended with a cold, phlegmatic constitution. Often, too, the alkalies predominate. Copious, pale-coloured urine, of sp. gr. between 1·015 and 1·020, denotes spasm; indeed, urine copious, like spring water, and of low sp. gr. from 1·000 nearly to 1·015, indicates a leucophlegmatic habit, a watery serous condition of blood, and what would be designated an anæmious condition of the system. Such urine also frequently contains imperfectly elaborated chyle. To these, however, there are some exceptions which the other conditions of the urine indicate.

"Urine of similar properties, but opalescent or wheyish and neutral, or which speedily becomes alkaline, shews a tendency to the phosphatic diathesis. Phosphatic urine, however, is frequently of much higher gravity—from 1·020 to 1·025—and then frequently abounds in urea. When the sp. gr. exceeds 1·018 or 1·020, has a deep colour, approaching to red, high-coloured, as it is termed, phlogistic fever may be considered as habitual, and indigestion, as hepatic derangement, is present. In such instances the alkaline lithates often abound and are deposited. Urine from 1·020 to 1·025 or 30, of an ale or porter colour, attended either with diuresis, or with a desire of frequent micturition, indicates excess of urea, a tendency to diabetes, and not unfrequently either hœmorrhoids are troublesome, or the prostate gland is in some degree affected. A sp. gr. of 1·030 (and above more certainly), transparent, of a pale straw colour or blueish green, most unequivocally denotes diabetes, nor does a saline taste alter the facts; for, though saline, sugar may be proved by some of the ordinary methods of search.

"From the above we often are guided to the application of chemical tests. Thus, if we suspect urea we ascertain this either by nitric acid or a solution of the oxalic, as before pointed out. If we suspect lithic acid, we can readily precipitate it by the acetic or hydrochloric. If an excess of the alkalies, we throw down bitartrate of potass by tartaric acid; and still more copiously by adding a little alcohol. Solution of potass or ammonia will shew a greater or less proportion of the phosphates; and we judge of the quantity by comparing the bulk of the precipitate obtained with the volume of urine used. A drop or two of acetic acid, and the solution of the triple prussiate of potass will almost immediately coagulate albumen, and produce cloudiness, and ultimately a solid coagulated deposit."

The Teeth, Physiologically Considered. By Samuel Ghrimes.—London: Henry Renshaw.

Ex pede Herculem, and, if we might analogically exclaim *ex libro bibliopolam*, Mr. Renshaw would take rank as "The Duodecimo Publisher" *par excellence*. The few books he has sent out to the world carry his paternity on their face so evidently that when, at rare intervals, one stumbles on them, as sometimes one may in the tea chest of an old book dealer, we, in the same way as Erasmus cried, "*Aut diabolus aut Morus*" are obliged to exclaim—"It must have come from Renshaw or Lilliput!" Murray's or Charles Knight's books do not carry clearer evidence of their origin than do Mr. Henry Renshaw's. With the exception of Mr. Van Butchell's work on Fistula, we know of none of this publisher's "*doings*" which might not repose easily in a waistcoat pocket, allowing room even for a congenial tobacco-box. He evidently fancies the public has a dislike for his books, and hopes to tempt them to a small charity by beseeching them with small matter for their perusal; and if we were not too much accustomed to these *ad misericordian* appeals, there is yet a chance that he might occasionally succeed. As it is, we can go no further than say that, if the Lilliputians be under the jurisdiction of the Society for the Diffusion of Useless Knowledge, the sooner it secures the services of Mr. Renshaw for them the better for both hemispheres. This "Physiological" work consists of 72 pages, including title and blank pages, and measures full two inches by *nearly* four. Down to page 18 we are made to "consider the teeth in reference to beauty" and "speech," and from that down to page 72, we are compelled, for three whole minutes—the time taken in a careful perusal—"to consider the teeth" in reference to everything but the one thing which some people think they were mainly made for—*eating*. Perhaps the author knows as yet little or nothing of such a use for them, and has published this stunted book as an experimental means of further acquaintance with that "function" of the dental apparatus. Certain it is, that in this infinitesimal matter of reading and writing we have the author's address very fairly given (he is one who will not avail himself of anonymous subterfuge), and he is especially anxious to convince all people who may be respectable enough to have his book presented to them, that they should periodically put their own teeth and those of their children under dental revision. Three pages are vouchsafed in this dental treatise on the structure and development of the teeth: it is quite as well, perhaps, there are not more—for his opinions are neither accurate nor complete. The work is indeed not only the superfluity which the writer thought it would be considered—but it is worse—it is a clumsy attempt to catch patients, and is *begrimed* with that spirit of "Empiricism pervading our profession" which the author affects warmly to deprecate. The book is a mere patient-trap. There was, of course, no truth in the laws of gravitation if a book of this kind, by Ghrimes—two inches by four in diameter—should have sought or got publication save from Mr. Renshaw. A debt of gratitude, though a small one, is owed to both author and publisher by—compositors and trunk-makers.

MEDICAL SOCIETY OF LONDON Sept. 25.

Mr. Pilcher in the Chair.

This being the first meeting of the present session, an eloquent and earnest address was delivered by the chairman, in the course of which he took occasion to allude to the great success which had attended the meetings of the previous session in every respect, and expressed his confident hope, that the one now commenced would equal it. He concluded with the statement, that the publication of volumes of transactions either entire, or in parts, had long occupied the attention of the council, and had also been the subject of the serious consideration of a sub-committee. It was at length finally decided on, and the members who communicated cases and essays, might anticipate the publication of the most valuable of those in their transactions.

Dr. Clutterbuck then proceeded to detail the particulars of a case to which he had been called, and which was personally interesting to himself. He was sent for about three weeks since to visit a young relative at Taunton, one of the physicians to the hospital, who had been labouring under constipation for several days and had not had any evacuation for the last three days, he arrived about nine in the evening, and met several very clever practitioners of the town around the bedside of his suffering relative. A short time before his arrival, his nephew had passed several evacuations, which had produced comparative relief from pain, and he anticipated in consequence a speedy recovery. In the course of the night, there were some stools passed, small and watery, but still decidedly feculent. He however had not any sleep, and had vomited several times. In the morning he was comparatively free from pain, but the unpleasant symptoms continued; his own conviction was however that he was doing well. In this opinion, Dr. C. whatever his hope might be, could not concur.

Meanwhile he (Dr. C.) endeavoured to obtain some of the previous particulars of the case. His nephew, who was a very healthy, active young man, about thirty years of age, had undergone violent exercise at skittles, about three days previously. He was seized with pain in the right iliac region, which in a few hours shifted to about the situation of sigmoid flexure of the colon. The part soon became tender to the touch. He was put into a warm bath, and purgatives administered; the bowels not having been opened, after the the lapse of some hours, he was bled to fourteen ounces, which was repeated in a few hours, as no relief had been obtained, and two or three dozen leeches were applied to the abdomen. The symptoms, however, increased in severity, no evacuation from the bowels took place, the pain and tenderness were aggravated, and febrile excitement superadded. This state of things caused alarm, and, naturally enough, it was considered essentially necessary to obtain evacuations, so that the administration of purgatives was persisted in. Mild aperients were at first given, and afterwards the more drastic, including croton oil, and turpentine enemata;—five grain doses of calomel were also tried twice, and afterwards smaller doses were administered occasionally for twenty-four hours. No relief, however, was afforded by these means, and the vomiting continued, together with considerable tenesmus, the latter attributed to the turpentine enemata. He was in this state when Dr. Clutterbuck arrived, and when he left him the following morning, he hoped, rather than believed, that all would be well. He was then more quiet, and could take liquid food; the pain was relieved, the tongue cleaner, the pulse improved, but still he could not sleep.

A few days afterwards, Dr. Clutterbuck received a letter from one of the surgeons of the Taunton hospital, containing the details of the termination of the case, from which it appeared that symptoms of exhaustion and irritability shewed themselves, and the patient gradually sunk. On examination of the body the next day, there were evidences of extensive inflammation in the abdominal cavity, and the intestines were agglutinated together. At the junction of the ileum and cæcum there was an ulcerated opening, and another in the sigmoid flexure of the colon. The ileum was partly sphacelated. The abdomen contained a quantity of liquid fæces, with an entire filbert floating in it.

Dr. Clutterbuck considered it very remarkable that his nephew had never in any way made any allusion to his having swallowed this filbert, but always seemed rather to regard his complaint as a case of intus-susception, followed by inflammation. He (Dr. C.) was inclined to look upon the filbert as the cause of all the mischief, and had its presence in the bowels been known, then the drastic purgatives ought not to have been exhibited, nor indeed did he think they should be employed at any time during the existence of inflammation. With a more passive treatment, probably, the foreign body might have passed away without causing fatal consequences. The real cause of danger in these cases was not the obstruction, but the consecutive inflammation, and this latter was certainly not likely to be benefitted by drastic purgatives, but, on the contrary, would be aggravated by their use.

Dr. Clutterbuck's object in bringing this case before the society was to obtain the opinions of the members, with regard to the policy of the administration of drastic purgatives under such circumstances.

Mr. Dendy enquired whether at the autopsy, the condition of the appendix vemiformis had been ascertained, or whether a diverticulum of the ileum was engaged in the disease?

Mr. Hancock asked whether the vomiting was stercoceous?

Dr. Clutterbuck could not furnish any other particulars than those he had already detailed.

Mr. Dendy thought that a hard foreign body might pass through the intestines without producing such mischief, as was daily the case with scybala, but if a closed sac, such as the appendix vermiformis, or one of the diverticula of the ileum was involved, then all the symptoms of internal strangulated hernia might be produced. He agreed with Dr. Clutterbuck as to the general impropriety of giving drastic purgatives in such cases; it was as incorrect as their administration after the operation—for strangulated hernia, as was still the practice with some hospital surgeons. He was however, unwilling to express an opinion as regarded the treatment in this particular case.

Dr. Clutterbuck stated that he did not mean to impute blame in this case, his object being chiefly to elicit the opinions of the members with respect to the plan of treatment generally.

Mr. Headland felt surprised Dr. Clutterbuck had not mentioned that anxious expression of countenance which is so peculiar and characteristic of abdominal affections. It appeared to him that the symptoms had not indicated inflammation of the intestines, the pain being rather of that character that accompanies intermission of their peristaltic action, prior to the supervention of inflammation. The most judicious course of treatment, he conceived, would have been to relieve the pain, and treat the symptoms as they arose, rather than act at once as for a case of inflammation.

Dr. Clutterbuck conceived Mr. Headland had misunderstood him. He had mentioned pain in the left side with great fullness, and tenderness on pressure. With regard to the expression of the countenance, it may have been noticed; but when Dr. Clutterbuck saw the patient, he was apparently relieved by having passed some motions. It must have been remarked, when he became worse. He believed it was a decided case of inflammation, and the only subject for enquiry was, what was the cause? Dr. C. repeated that his only object was to ascertain the propriety of using drastic purgatives during the existence of inflammation.

Dr. Stewart mentioned a case which had been under his care, and that of Dr. Theophilus Thompson, which he considered to be similar to the one narrated by Dr. Clutterbuck. The treatment before the patient was seen by Dr's. L. and T. had been by the use of drastic purgatives, while taking which the patient got much worse. This treatment was reversed, and external applications as leeches and blister, with demulcents, enemata, and a suppository were employed. The patient recovered.

Dr. Theophilus Thompson stated that cases of this kind were not unfrequent, and medical interference was decidedly injurious. We meet with cases in which we have reason to believe that ulceration of the intestines has been going on insidiously for sometime, and the muscular coat is affected. By a law of nature, imposing rest on parts diseased, the peristaltic motion is arrested, until the inflammatory action is stayed, from which we may draw the conclusion, that that arrest should not be interfered with. Dr. Thompson afterwards proceeded to give more in detail the particulars of the case previously described by Dr. Stewart, in the course of which he mentioned that while the patient was under their joint care, the friends more than once, contrary to his express injunction, administered purgatives, on each occasion causing an increase in the severity of the symptoms.

Dr. Golding Bird did not think the appearances after death sufficiently explanatory of the case. He believed that the filbert acted as a source of local irritation. In cases of active inflammation after the operation for hernia, there are very few local signs of inflammation with tenderness, although the disease may terminate fatally. The same is frequently the case in instances of this kind, where the appendice vermiformis is inflamed, although in a case picked out for clinical instruction, all the symptoms may be found. The diagnosis under such circumstances is therefore very difficult.

Dr. Thompson mentioned a case of ulceration of the stomach, which was attributed to a plum stone that had been swallowed some time previously. The ulceration was similar to that described by Mr. Crisp in his paper which was read recently before the society. He thought that in Dr. Clutterbuck's case, ulceration had been going on for some weeks, or months, and was approaching the muscular coat, when the violent exertion at skittles caused its rapid extension.

Dr. Wiltshire narrated a case of constipation that had been under his care, in which purgatives had been freely administered without effect, his patient getting much worse, when he changed his plan, gave large doses of opium and hyoscyamus, and asafœtida enemata, with the effect of producing a full action on the bowels; in four hours his patient was convalescent.

Mr. Hancock observed that the question before the society was whether drastic purgatives should be administered in these cases.

He did not consider the cause of the torpor of the bowels, to be the quiescent state of the muscular coat, but a lesion of function from the irritation and ulceration, and, when this occurs, it becomes a question whether the power of the intestines should be destroyed by drastic purgatives, or the nervous excitement allayed by quiescent medicines. He was opposed to the use of purgatives.

Granular Degeneration of the Kidney.—Dr. F. Simon has met with a peculiar precipitate in urine. in connection with granular degeneration of the kidney. The urine was of a deeper or paler brown colour, often tinged with blood. On standing it let fall a pale slimy-looking sediment, a portion of which viewed under a power of 300, exhibited the following forms: *a*, cylindrical sacs with distinct walls, and of a diameter that permitted mucus-corpuscles, to move freely within them. They were either completely or partially filled with a granular matter, and their opacity and transparency were in relation with the degree in which they were filled. Mixed with the granular matter were small cell-like bodies, resembling mucus-corpuscles *b*;, amorphous elongated masses, having the form of the cylinders last described, but without any bounding parietes, and evidently the contents of the cylinders *e*. ;rounded dark corpuscles, from two to three times the size of the mucus-corpuscles, and filled with granular matter. These are the bodies which Gluge observed in diseased kidneys, and designated exudation-corpuscles, but which bear every resemblance to large primary cells. Besides these peculiar forms, others commonly met with in urine were observed,—epithelial cells, mucus-corpuscles, &c.

Cream of Taraxacum.—Dr. Collier recommends a preparation of taraxacum made as follows, as a valuable substitute for the extract usually employed:—Cut the fresh roots of dandelion freed from any adherent earthy matter previously washed and slightly scraped) into transverse slices. Sprinkle any quantity of these while moist, slightly with spirit of juniper, and express them in a tincture press. The cream thus expressed, will keep any reasonable time for the purposes of the practitioner in the hottest weather. The doses, a tablespoonful or more, twice or thrice a day, will probably produce two or more diurnal biliary evacuations. This preparation, which certainly may prove of service, is introduced by Dr. Collier, with as ridiculous a flourish of trumpets as that which ushered in to the notice of the profession, his formula for blue pill with iron. Not contented with a fair and reasonable explanation of the advantages of his remedy, he launches forth generally into an account of a variety of subjects, almost totally unconnected therewith, but which he, doubtless, considers to be both wisely and wittily treated. The interpolations and crudities to which we allude, are to be met with in almost every production of his pen, and most notedly in his translation of the Pharmacopœia. "'Tis a foolish fault—pray you, avoid it."

Stone in the Bladder.—Mr. Sherwin, of Hull, performed the operation of lithotomy on a boy, nine years of age; it was followed by symptoms of peritonitis, but of a character to preclude his having recourse to antiphlogistic treatment. Having noticed a suggestion in Sir B. Brodie's published lectures, to lay open the wound, and thus give vent to a quantity of sanies, he acted upon it, and about from two to three ounces of a pink-coloured sanies, having a fœtid and ammoniacal odour, were evacuated. The symptoms immediately improved, and the boy speedily recovered.

ST. BARTHOLOMEW'S HOSPITAL.—MEDICAL SCHOOL.—Winter Session, 1843, commencing October 2d.

LECTURES—

Medicine—G. Burrows, M.D.
Surgery—William Lawrence, F.R.S.
Descriptive and Surgical Anatomy—F. C. Skey, F.R.S.
General and Morbid Anatomy and Physiology—Mr. Paget.
Superintendence of Dissections—Mr. M'Whinnie and Mr. Ormerod.
Chemistry—Mr. Griffiths.
Materia Medica and Therapeutics—G. L. Roupell, M.D. F.R.S.M.
Midwifery and Diseases of Women and Children—E. Rigby, M.D. F.L.S

Summer Session. 1844, commencing May 1st.

Botany—F. J. Farre, M.D. F.L.S.
Forensic Medicine—W. Baly, M.D.
Practical Chemistry and Natural Philosophy—Mr. Griffiths.
Comparative Anatomy—Mr. M'Whinnie.
Midwifery, &c.—E. Rigby, M.D. F.L.S.

CLINICAL LECTURES.

On Medicine by Dr. Roupell and Dr. G. Burrows.
On Surgery by Mr. Lawrence and Mr. Stanley.

COLLEGIATE ESTABLISHMENT.—The Governors of the Hospital having resolved to establish the Collegiate System in connection with the Medical School, several houses within the Hospital walls have been lately fitted up for the residence of a certain number of students, and under the direction of the Treasurer and a Committee of the Governors, every arrangement has been made which appears likely to promote the interests and comfort of the students.

The superintendence of the establishment has been entrusted to Mr. Paget, the Resident Warden.

Further particulars, in regard to every department of School, may be obtained from any of the Medical or Surgical Officers or Lecturers, on application at the Anatomical Museum, or the Library.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—Session 1843-44, commencing Monday, October 2:—

Theory and Practice of Physic—Dr. Macleod.
Theory and Practice of Surgery—Mr. Hawkins and Mr. Babington.
Clinical Medicine—Dr. Seymour and Dr. Nairne.
Clinical Surgery—Mr. Hawkins and Mr. Babington.
Anatomy and Physiology—Mr. Tatum and Mr. Hen. Jas. Johnson.
Descriptive and Practical Anatomy—Mr. H. J. Johnson and Mr. Henry Charles Johnson
Materia Medica—Dr. Nairne.
Midwifery—Dr. Lee.
Medical Jurisprudence—Dr. Page.
Botany—Dr. Dickson,
Chemistry—Mr. Brande and Mr. Solly.

A Course of Lectures, illustrative of some important Parts of Surgery, will be delivered gratuitously to the Pupils of the Hospital, by Sir Benjamin C. Brodie, Bart.

The Introductory Address on the opening of the Hospital School, for the Session 1843-44, will be delivered on Monday, October 2, at One o'Clock, p.m., in the Theatre of the Hospital.

Further particulars and Prospectuses may be obtained by applying to the Porter of the Hospital; to the porter of the Hospital Museum; or at the Anatomical Theatre, in Kinnerton-street, Wilton-place.

WESTMINSTER HOSPITAL.
SESSION, 1843—4.

The Lectures will commence on October 3rd, when the Introductory Address will be delivered by Dr. Kingston, at two o'clock.

Anatomy and Physiology; Dr. Hunter.
Descriptive and Surgical Anatomy; Dr. Hunter, and Mr. Pennell.
Chemistry; Harman Lewis, M.A., Trinity College, Cambridge.
Materia Medica; Dr. Basham, Physician to the Hospital.
Medicine; Dr. Hamilton Roe and Dr. Kingston, Physicians to the Hospital.
Surgery; Benjamin Phillips, F.R.S.
Midwifery; Dr. Andrews,
Medical Physics; Charles Brooke, M.B., Cantab.
Forensic Medicine; Dr. Frederic Bird and William Hodges, Esq., Barrister-at-law.
Botany; Dr. Basham and Dr. Frederic Bird.
Practical Midwifery; Dr. Andrews.
Comparative Anatomy; Dr. Hunter.
A Course of Lectures, illustrative of some of the more important points in Surgery; by G. J. Guthrie, F.R.S., and F. Hale Thomson, Esq.

CLINICAL LECTURES ON

Medical, Surgical, and Obstetric Cases, are delivered throughout both Sessions.

*** Perpetual Pupils of the School are eligible as Candidates for the offices of Resident House-Surgeon, and of Resident Clinical Assistant to the Hospital, with board and Apartments free of all expense; as also for the offices of Assistant House-Surgeon, and Clinical Clerk. Pupils of the Hospital, and not of the School, are also eligible as Candidates, but their election is subject to the payment of 80 Guineas for the office of House-Surgeon, and 40 Guineas for that of Clinical Assistant.

In addition to the Prizes given in the respective Classes, others will be awarded by Mr. White and Mr. Guthrie.

MEDICAL EDUCATION.—CHARLOTTE STREET SCHOOL OF MEDICINE.—The WINTER LECTURES, in accordance with the regulations of, and qualifying for, the University of London, Royal College of Surgeons, Apothecaries' Hall, Army and Navy Medical Boards, and the London College of Physicians, will commence, as usual, Monday, October 2nd:—

Professors of the School—Mr. Dermott, Dr. Aldis, Dr. Harrison, Dr. Scoffern, Dr. Ryan, Mr. Clarke, Mr. Cooper, and H. P. Hinde, Esq., of the Inner Temple; the above Lecturers being duly recognised by all the Medical Boards in the United Kingdom.

Perpetual to all the Lectures necessary for the College of Surgeons and Apothecaries' Hall, 30 Guineas, whereby a saving of one-half the usual expense of Medical Education is effected.

Moreover, owing to the number of his Pupils, Mr. D. is enabled, by having contracted with an Hospital, so to adapt the outlay in Medical Education to the circumstances of the times, as to enter Pupils to Hospital Practice, both Surgical and Medical, for one, two, or three years, together with the whole of the above-mentioned Lectures, for 55 Pounds, whereby a still further saving is effected of more than one-half the ordinary expense.

Perpetual to Mr. Dermott's Anatomical Lectures, Surgical Lectures, Demonstrations, and Dissections, if entered to without the rest, 10 Guineas.

Medical Practitioners, who have not yet obtained the College diploma, expeditiously qualified for examination.

Courses of Private Instruction given by the Teachers to qualify for passing the College of Surgeons, Apothecaries' Hall, and London University.

A Vacancy for Two House-Pupils, whose professional education and regularity of habits will be most scrupulously attended to. Mr. D. has been upwards of twenty years a recognized teacher; this may be a sufficient guarantee of his experience in medical education.

Apply to Mr. Dermott, Charlotte Street School of Medicine, 15, Charlotte Street, Bloomsbury; or to Dr. Harrison, 14, Gower Street.

ROYAL COLLEGE OF SURGEONS.

DR. STEGGALL continues to assist Gentlemen in their studies preparatory to Examination at the College of Physicians, College of Surgeons, Apothecaries' Hall, &c., either privately or in classes.

For Terms, and other particulars, application may be made to Dr. S. at his residence and Lecture Rooms, 2, Southampton Street, Bloomsbury Square, in the Morning, before 1 o'clock, and in the Afternoon, after 3 o'clock.

ROYAL DISPENSARY for DISEASES of the EAR, Dean-street, Soho.—Mr. CURTIS will commence his Autumnal Course of Lectures on the Anatomy, Physiology, and Pathology of the Ear, on Monday, October 2.—For particulars apply to Mr. Curtis, at his own house, 2, Soho-square.

Mr. Curtis's Report of the Royal Dispensary, containing (for the information of the Profession) an Account of the Modes of Treatment employed, may be had at the Institution, and of all booksellers.

YORK SCHOOL of MEDICINE.—Session 1843-44.—The Winter Session will commence on Monday, October 2, 1843, when the following Courses of Lectures will be delivered:—

Anatomy and Physiology—Mr. Hopps.
Demonstrations and Dissections—Mr. Crummack.
Principles and Practice of Medicine—Dr. Simpson and Dr. Goldie.
Principles and Practice of Surgery—Mr. Russell.
Materia Medica and Therapeutics—Mr. Williams.
Chemistry—Mr. Barker.

The following Summer Courses will commence May 1st, 1844:—

Botany—Mr. William Matterson.
Medical Jurisprudence—Mr. Husband.
Midwifery and the Diseases of Women and Children—Mr. J. Allen and Mr. Anderson.
Practical Chemistry—Mr. Barker.

Chemical Lectures will be delivered to the Pupils entering to the Medical and Surgical Practice of the York County Hospital.

An extensive Museum of Anatomy and Pathology is annexed to the School.

The introductory Address will be delivered by Mr. Russell, on Monday, Oct. 2, 1843, at 2 P.M.

Further particulars and Prospectuses may be obtained by applying to Mr. James Allen, 16, Petergate, York, Secretary to the York School of Medicine; or to any of the Lecturers.

THE LUNGS A GALVANIC BATTERY.

TO STUDENTS OF MEDICINE, Educationists, Mesmerists, Phrenologists, Friends, and Opponents of Teetotalism, intending Emigrants, and persons with delicate lungs and Digestion.

Dr. Kienan will give a Course of Six Conversational Lectures, in which he will prove that the Lungs are essentially a Galvanic Battery, and will thence deduce and apply principles and rules of unexpected interest to the above classes of persons.

First Lecture on Tuesday, Oct. 3, at half-past Eight o'clock, at No. 5, Upper North-place, Gray's Inn Lane.

To continue on Tuesdays and Fridays at the same hour, till completed.

Tickets for the Course, 5s. Single Lecture, 1s.

DR. POWER continues to hold his Classes for the College, Hall, London University, &c., at No. 7, Maze Pond, Guy's Hospital.

Dr. P. professes, by a combination of Lectures and Examinations in a curriculum of about 6 or 9 weeks, to work through all the subjects required by the Hall and College, in such a manner as to enable students to TAKE NOTES, embracing a complete epitome of all the leading principles of the profession. Dr. P. has a vacancy for a house pupil.—Enquire at 7, Maze Pond, or 37, Nelson Square, Blackfriars

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DR. T. S. HARRISON, Member of the Royal College of Physicians, will commence his LECTURES on the Anatomy and Physiology of the Female System, the Theory and Practice of Obstetricy, and the Diseases of Woman and Children, at the Charlotte-street School of Medicine, on Tuesday, the 3rd of October, at 4 p.

Apply to Dr. Harrison, 14, Gower Street, or at the Charlotte Street School of Medicine.

ALDERSGATE SCHOOL OF MEDICINE,
AND A
COLLEGE OF THE UNIVERSITY OF LONDON.

THE WINTER SESSION will commence OCTOBER 2nd, with an Introductory Lecture by Dr. GOODFELLOW.

General and Morbid Anatomy and Physiology—Dr. Goodfellow and Dr. Emmott.
Descriptive and Surgical Anatomy—Mr. Holshouse and Dr. Emmott.
Theory and Practice of Medicine—Dr. C. J. B. Aldis and Dr. Klein Grant.
Principles and Practice of Surgery—Mr. P. B. Lucas.
Midwifery and the Diseases of Women and Children—Dr. Walker.
Materia Medica and Therapeutics—Dr. Willshire.
Chemistry—Dr. Scoffern.
Forensic Medicine—Mr. Hodges and Dr. Scoffern.
Botany—Dr. Brown.

Attendance on all the Lectures required by the Colleges of Physicians and Surgeons and the Apothecaries' Hall, Thirty-six Guineas, (inclusive of Practical Chemistry,) and for the University of London, Fifty Guineas.

SCHOOL of ANATOMY and MEDICINE, adjoining St. George's Hospital.—The Session for 1843-44, will commence on October 2nd.

Introductory Address—Dr. Lankester, at twelve o'clock.
Anatomy, Physiology, and Surgical Anatomy—Mr. Lane and Dr. W. V. Pettigrew.
Descriptive and Practical Anatomy—Dr. Pettigrew.
Extra Demonstrations—Dr. Pettigrew and Mr. Cane.
Chemistry—Mr. Rodgers.
Materia Medica—Dr. Lankester, F.L.S.
Midwifery—Mr. Bloxam.
Medicine—Dr. Goolden.
Surgery—Mr. Lane and Mr. Pilcher.
Medical Jurisprudence—Mr. Ancell and Mr. Warder.
Botany—Dr. Cook, F.L.S.
General Pathology—Mr. G. Robinson.
Dental Pathology—Mr. J. Durance George.
Aural Surgery—Mr. Pilcher.
Practical Chemistry—Mr. Rodgers.

General Fee, qualifying for the University of London, College of Surgeons, Apothecaries' Hall, and the Army and Navy Boards, Forty Guineas.

Prospectuses and further particulars may be obtained at the School, Grosvenor Place.

MR. E. E. BARRON, Demonstrator of Anatomy, continues to give COURSES of PRIVATE MEDICAL TUITION, adapted to Students preparing for Examination at the College of Surgeons, Apothecaries' Hall, University of London, Army, Navy, and India Boards, Universities of Scotland, and College of Physicians, at his Residence and Class Room, 16, St. Thomas's Street, East, Borough.

Classical Instructions, by Mr. T. Slipper.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, September 22nd, 1843. The extended and practical Course of Chemical Lectures and Demonstrations for Medical and General Students, delivered in the Laboratory of this Institution by Professor Brande, and Edward Solly, Jun. Esq., will commence on Tuesday, the 3rd of October, at 9 in the morning.

The Lectures will be continued on Tuesdays, Thursdays, and Saturdays, at the same hour, during the Session, which terminates in May.

A Prospectus and further particulars may be obtained at the Royal Institution. JOSEPH FINCHER, Assistant Sec.

UNIVERSITY OF LONDON.—FACULTY OF MEDICINE.

NOTICE IS HEREBY GIVEN,—That the Second Examination for the Degree of Bachelor of Medicine will commence on Monday, the 6th, of November; and that for the Degree of Doctor of Medicine on Monday the 27th, of November. Candidates for the latter Degree, who have taken a Degree in Arts in any one of the Universities of the United Kingdom, will be exempted from the Examination in Intellectual Philosophy, Logic, and Moral Philosophy.

The Certificates required must be transmitted to the Registrar fourteen days before the commencement of the Examination to which they refer. By order of the Senate,

Somerset House, R. W. ROTHMAN, Registrar,
September, 18th, 1843.

MIDDLESEX HOSPITAL SCHOOL of MEDICINE.—The WINTER SESSION will commence on Monday, October 2nd, 1843:—

Anatomy, Physiology, Demonstrations, and Dissections, by E. W. Tuson, F.R.S., Mr. Erasmus Wilson, and Mr. H. M. Rowdon.
Medicine, by F. Hawkins, M.D.
Surgery, by J. M. Arnott, F.R.S.
Midwifery, by J. North, F.L.S.
Materia Medica, by Mervyn A. N. Crawford, M.D.
Chemistry, by Mr. Everitt.
Forensic Medicine, by Mr. C. De Morgan.
Botany, by Mr. Rogers.
Clinical Medicine, by Dr. Hawkins, Dr. Wilson, and Dr. Watson.
Clinical Surgery, by Mr. Arnott, Mr. Tuson, and Mr. Shaw.

Perpetual Fee to the whole of the Lectures, £15.

The Introductory Address on the opening of the Session will be delivered by Mervyn A. N. Crawford, M.D., on Monday, October 2nd, at Two o'clock.

A Public Distribution of Prizes will take place at the termination of the Winter Session.

Two Prizes, the gift of William Tooke, Esq., F.R.S., of £15 and £10 respectively, will be awarded for general proficiency.

Clinical Prizes in Medicine and Surgery will be awarded by the Physicians and Surgeons of the Hospital.

A Theological Prize will be offered by the Chaplain of the Hospital to such Students as may be desirous of competing for it.

The Museum, Library, and Reading-room, are open for the use of the Pupils.

For further Particulars, apply to the Secretary of the Hospital.

THE METROPOLITAN EAR INSTITUTION (late Institution for Diseases of the Ear) 32, Sackville street.

Mr. Yearsley will commence a Course of Lectures and Practical Demonstrations on the Anatomy, Physiology and Diseases of the Ear and Throat, including functional derangements and Congenital malformations of the Vocal Organs, on Wednesday, October 4th, at Two o'Clock, P. M. To be continued every alternate Wednesday throughout the Medical Session at the same hour. Students entering to these Lectures and Demonstrations will be admitted to see the practice of the Institution. Free to Medical men in actual practice on presenting their cards.

CHARING-CROSS HOSPITAL MEDICAL SCHOOL.—WINTER SESSION, 1843.

Introductory Address, Monday, Oct., 2d, at Three o'Clock.—Dr. Chowne.

	Hours.
Chymistry.—Mr. Fownes	9 to 10
Materia Medica.—Dr. Steggall and Dr. Willshire	9—10
Descriptive and Surgical Anatomy.—Mr. Hird	10—11
Demonstrations.—Mr. Hird and Mr. E. Canton	- - - -
Midwifery, &c.—Dr. Chowne	2—3
Anatomy and Physiology.—T. W. Jones, F.R.S.	3—4
Medicine.—Dr. Shearman and Dr. Rowland	4—5
Surgery.—Mr. Hancock	5—6
Natural Philosophy.—Mr. H. Watts.	- - - -

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	Full period required	15 15

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Physicians—Dr. Shearman, Dr. Golding, Dr. Chowne.
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London: Printed and Published by JAMES ANGERSTEIN CARFRAE 49, Essex Street, Strand, in the Parish of St. Clement Danes, Westminster, in the County of Middlesex.—Sept, 9th, 1843.